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ABSTRACT

The guide contains suggestions for the selection, repair, and care of woodwind instruments and equipment; goals and procedures for beginning, intermediate, and advanced levels of study; and specific annotated reference lists. The book is arranged into five major sections by type of instrument: flute, oboe, clarinet, saxophone and bassoon. Each section contains (1) an introduction discussing historical background of the instrument, selection, care, repair, and tuning procedures; (2) method criteria; (3) teaching and learning techniques for beginning, intermediate, and advanced levels; and (4) annotated bibliographies of relevant books, methods, periodicals, recordings, and films and filmstrips. The longest section on teaching techniques focuses on breath control, fingering, tone quality, articulation, range, and style. All sections emphasize the need for students to clean instruments regularly and properly, and to practice in groups as well as alone. A final section contains a bibliography of 59 general resources such as instrument repair manuals, other teaching guides, and indexes of musical wind instrument makers. (AV)

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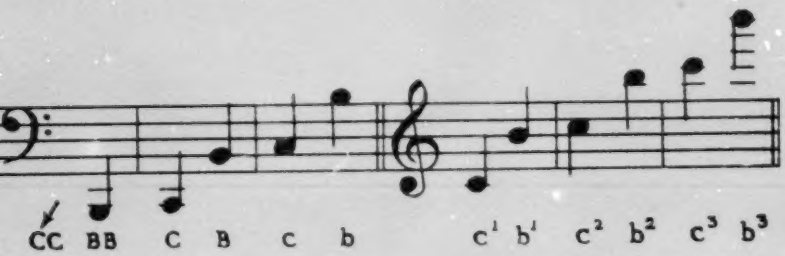
Pitch Notation Chart

In order to establish a degree of consistency for pitch identification in all five parts of this publication, the following chart has been used as a standard reference:



TEACHING WOODWINDS

The University of the State of New York/The State Education Department
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FOREWORD

Teaching Woodwinds is one of a series of instructional guides for both generalists and specialists in music education. Intended as a basic resource, it contains suggestions for the selection, care, and repair of woodwind instruments and equipment; goals and procedures for beginning, intermediate, and advanced levels of study; and specific, annotated reference lists. The project was initiated by A. Theodore Tellstrom, formerly chief of the Bureau of Music Education, now executive director of the Music Educators National Conference, and will ultimately include individual publications for teaching strings, woodwinds, brass, percussion, keyboard instruments, and voice.

The manuscript for this publication was written by Mary Anne Bennink, flute specialist and instrumental music teacher in the Jamestown public school system; Philip R. MacArthur, principal oboist with the Syracuse Symphony Orchestra, first oboist of the Center Orchestra of Lake Placid, and associate in music at Syracuse University; Thomas Nazaro, clarinet specialist and chairman of the music department in the Salamanca public school system; Donald C. Cantwell, saxophone specialist and director of instrumental music at Whitesboro Central School; and Thomas G. Closser, first bassoonist of the Tri-City Opera and the Binghamton Symphony, and director of the Binghamton Central High School Orchestra.

Edited by Bennett Reimer, professor of music at Case-Western Reserve University, the material was published in tentative form and distributed for tryout in 200 public schools throughout the State. The manuscript was then revised by Mrs. Bennink, author of the section on flute, in accordance with the suggestions from the teachers in the tryout schools and the following specialists:

- Virginia Gravenor Atherton of Wilmington, Delaware, Donald Hartman of the State University College at Fredonia, John Oberbrunner of the Syracuse Symphony Orchestra, and James Pellerite of Indiana University, who reviewed the chapter on teaching flute;
- Donald E. McCathren of Duquesne University, Harold Sachs of Forest Hills High School, and William C. Willett of the Hartt College of Music, who reviewed the clarinet section;

- The following members of the World Saxophone Congress: Kenneth M. Deans of the University of Georgia, James Houlik of East Carolina University, Lee Patrick of the University of Kentucky, Sigurd Rascher of Shushan, New York, James Stoltie of the State University College at Potsdam, Lawrence Teal of the University of Michigan, and Lawrence Wyman of the State University College at Fredonia; and Ralph Rasmusson of Falconer Central School, who reviewed the suggestions for teaching saxophone;
- William J. Scribner of the American Symphony Orchestra, who reviewed the chapter on bassoon; and
- Eugene J. Cunningham, associate in music education, and Charles J. Trupia, then associate in music education and now supervisor of the Humanities and Performing Arts Unit, who reviewed the entire manuscript at various stages of its development.

Teaching Woodwinds was written under the careful supervision of John A. Quatraro, associate in music education (now deceased), and prepared for press by Richard G. Decker (now deceased) and Rita A. Sator, associates in secondary curriculum development. Special recognition belongs to Richard Laffin, a student at Dartmouth College, for his remarkable illustrations.

HERBERT BOTHAMLEY
Chief, Bureau of General Education Curriculum Development

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Director, Division for Curriculum Services

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I. Introduction

HISTORICAL BACKGROUND

The flute is a hollow cylinder with one closed end, an embouchure plate and aperture at that end, and a series of covered and/or open tone holes along its length. It produces a variety of tones when the player vibrates the enclosed column of air by blowing at an angle against the edge, manipulating keys, and covering some of the tone holes.

Today most flutes are made of metal; but those used by the people of ancient civilizations were shaped from reeds, wood, and clay—as well as metal. Flutes of the 17th and 18th centuries were conical instruments carved from wood and having fewer tone holes than their modern counterparts. The first cylindrical flute was made from metal in 1846 by Theobald Boehm, who also designed a system that made it possible to place the openings more accurately and therefore improve the intonation. To this day, flute manufacturers still utilize the principles of what has come to be known as the *Boehm System*.

There are two basic types of flute: the vertical or "end-blown" model, and the horizontal or transverse model. The names derive from the manner in which the instrument is held as it is played.

- The vertical flute generally has a "whistle-type" chamber with a mouthpiece into which the player blows against an edge. Some Arab tribes still use an early form of the instrument called the Egyptian *nay*. A later type, the *recorder*, was a standard member of European orchestras and chamber groups until the middle of the 18th century and has recently become popular with college students as well as chamber players because of its mellow tone, ease of blowing, and relatively low cost.
- The horizontal flute has an embouchure plate and aperture in the cylinder itself. The player blows across the aperture at various angles and thus controls the timbre, intonation, and dynamics of the sound he produces. Early forms of the horizontal flute had cumbersome tone holes and key mechanisms which created both technical and acoustical problems; but Boehm's cylindrical-bore metal flute and his rearranged fingering system did much to solve them.

The instrumental music teacher will probably be most concerned with the C flute, although other members of the family are also worthy of note. The C flute has a practical range of c^1 to c^4 and is a standard member of the woodwind section in a band or orchestra. The C piccolo, which has a practical range of d^1 to c^4, sounds an octave higher and adds brilliance to the ensemble; but it is not equipped with low C and C♯ keys. The instrument comes in wood, metal, and plastic. Some professional musicians prefer the wooden piccolo because of its mellow tone, although the instrument is sensitive to sudden changes in temperature and tends to develop water bubbles if the bore is not well oiled. Others find that piccolos made of silver are more responsive. In general, plastic or metal piccolos are the ones most often used in schools. For a number of years, the D♭ piccolo was preferred for bands because it afforded a greater facility in some keys and had a somewhat brighter tone; but during the last few decades, it has been almost completely replaced by the C piccolo. Some teachers have used the E♭ flute successfully with very young beginning flutists. It sounds a minor third higher than the written pitch and is adaptable to E♭ clarinet band parts. Finally, there are two flutes which sound below the written pitch: the alto flute in G and the bass flute in C. Although some professional performers use the bass or *contrabass* flute in solo and ensemble playing, the instrument is rarely used in elementary and secondary schools. The alto flute is also used primarily in solo and ensemble work, but parts for this instrument are beginning to appear more frequently in orchestral repertoire.

SELECTION, CARE, AND REPAIR

Advanced students and professional musicians usually play artist model flutes and piccolos with sterling silver bodies, white gold springs, and—on instruments made by hand—silver-soldered tone holes. In selecting an instrument for high school use, the following specifications should therefore be considered as *minimum requirements*. The flute should have:

- A nickel or German silver body with silver plating;
- Ribbed construction;
- Rolled or beveled tone holes;
- Stainless steel—or more recently, nylon—screws and rods;
- Phosphorous bronze springs;

- Drawn tone hole sockets;
- Bladder pads;
- Forged keys;
- A closed G♯ key;
- Keys and/or rings of even height; and
- A seamless body construction.

In addition, if the piccolo has a slight broadening in the bore, it will produce a mellower tone with greater blending power than if the bore is strictly cylindrical.

Manufacturers list a number of options for the flute, some of which are detailed here:

- A low B key

  This is recommended for advanced students and professional musicians because it increases the range of the instrument, gives extra resonance to the lower register, and adds resistance.

- An open hole or French model

  The open hole or French model offers improved intonation and response, has been used successfully with beginners, and encourages correct hand position from the start. An inset or in-line G key, another wise option, is available without charge on this model. The manufacturers also supply plugs that can be used temporarily at the discretion of the teacher, but most students adjust so quickly to the open holes that there is little need for plugs. (A mirror is a valuable aid in developing correct finger position.)

- A sterling silver head joint

  Solid silver produces a richer, more colorful tone; but it is also more expensive. This option should be carefully evaluated in terms of comparative responsiveness and cost.

Regardless of its particular qualities, however, a flute or a piccolo should always be tried by an accomplished flutist, if possible, and—in the case of secondhand instruments—further examined by a competent repairman, before the purchase is made.

Once a suitable instrument has been purchased, it should be maintained in proper working condition. The flute or piccolo should be enclosed in its own case whenever it is not in use. In order to prevent the case from opening and/or being dropped, it should be locked and carried by the handle. If it doesn't have a handle, the case should be placed in a simple outer covering that has one. Canvas covers complete with

handles and made to fit over plain cases are readily available, and well worth the price.

In assembling and disassembling the instrument, each section should be gripped about the neck—*never on the keys or rods*—and given a gentle twist. Keeping the joints free of sticky grime will facilitate the process and further protect the instrument from harm. In addition, the interior of the flute or piccolo should be thoroughly swabbed after each playing to keep the surfaces clean and to maintain responsiveness. A flute can be swabbed with a strip of nonlinting cloth or chamois which has been threaded through the eye of a cleaning rod and then wrapped around its length to prevent any scratching of the metal surfaces. A piccolo should be treated in the same way, using a small strip of thin, nonlinting material attached to a rod specifically designed for swabbing piccolos. Occasionally, an annoying bubble will form under the B key; but the moisture can usually be absorbed with a piece of fine paper or thin cotton toweling. If it becomes necessary to remove the cork in the head joint, the cap should be unscrewed and the cork removed *from the body end* because of the parabolic shape of the joint.

It is best to wipe the outer surface of the instrument with a soft, untreated cloth and leave the use of silver polish and similar cleaning agents to experienced repairmen. Any stickiness on the pads can usually be removed by drawing a piece of fine paper or a thin, damp cloth between the depressed key and the pad; but stubborn cases may require alcohol or lighter fluid as a solvent. It is imperative that both joints be kept free of grit and dust. Cork grease is designed for use on the corked joints of wooden piccolos and is *not* recommended for metal joints, although it can be helpful in easing a bad fit until a repairman can make the necessary adjustments. Joint protector caps are sometimes available—but these were originally intended to protect the case (from grease around the joints) rather than the instrument, and are no longer provided by some manufacturers. Periodically, the instrument will require oiling; but because too much oil catches dust and gums the action, the following cautions should be observed:

- Hold the instrument in a vertical position.
- Place a *minute* drop of oil at the hinge of each key.
- Carefully remove any excess oil.

Minor maladjustments can usually be repaired with the small tools in a jewelry repair kit. The screws which govern

the height and sealing of the keys can be adjusted with a jeweler's screwdriver and, if necessary, held in place by a drop of clear nail polish. (Nylon screws appear to be less affected by the vibrations produced when the instrument is played.) Finally, as the cork tabs and levers inevitably wear thin, they can be adjusted temporarily by building them up again with strips of masking tape, scotch tape, or gummed envelope stickers.

TUNING PROCEDURES

Before the student attempts to tune a flute or a piccolo, s/he should warm the instrument to playing temperature either by playing it or by blowing air through it on a silent c^1 fingering. Tuning adjustments are made by pushing or pulling the head joint in or out of the body. Because, at its shortest length, a flute will play slightly above the a^1 –440 cps, it is advisable to extend it about 1/8" to a "rest" position and then begin the tuning process. When the head joint is pulled slightly, the instrument tends to be in better tune with itself; and the $c\sharp^2$ is flattened and improved in resonance.

If the instrument responds poorly, or if the octaves are out of tune, the position of the cork in the head joint should be checked. Measure 17 mm. on the handle of a cleaning rod for flutes (or 9 to 10 mm. on the handle of a cleaning rod for piccolos), mark the spot, and insert the rod into the bore until the end touches the cork. In proper adjustment, the mark will appear in the center of the blow hole. If the instrument is not adjusted properly, loosen the cap and move the cork until the distance between it and the center of the blow hole is consonant with the mark on the cleaning rod.

A flute should be tuned to either A or B♭ in the lower two octaves, and the fifths in between. To avoid the student's "lipping" the instrument into tune, have him/her approach the tuning note by moving up and down the scale. Once the flute is generally in tune, minor adjustments can be made by altering:

- The shape and size of the opening between the lips,
- The direction of the air column, and/or
- The velocity and volume of the air supply;

but the changes must be related to the register and the dynamic level being played.

One or more of these alterations can also be used to correct the aberrant pitch tendencies of specific notes on the instru-

ment. A discussion of these notes, with an accompanying chart, can be found in Frederick Wilkins' *The Flutist's Guide* (see brief annotation in the Selected Resource Materials listing at the end of this chapter). Changing the direction of the air column can help to solve another problem as well. Beginning flutists often play sharp in *forte* passages and flat at the *piano* level. However, by dropping the lower jaw and blowing more into the bottom of the embouchure hole, the student can correct the sharpness of his/her tone, and the opposite activity will avoid flatness.

II. Method Criteria

According to many professionals, the young flutist's chief difficulty is inadequate breath support; and this, in turn, causes a number of problems with tone quality, intonation, and phrasing. For this reason, one of the most important items to consider in selecting a method book is the inclusion of useful material on the mechanics of correct breathing and posture, accurate phrasing, and related details. In addition, the ideal text for individualized group instruction should have:

- A simple, uncluttered format with strong appeal for students;
- Accurate and comprehensive fingering charts, photographs and diagrams of such fundamentals as playing position, and other visual materials;
- A suitable balance between high quality solos and etudes;
- Clearly presented scales and arpeggios;
- Ample material for ensemble playing;
- Regular and effective reinforcement in such areas as fundamentals, special fingerings, and the achievement of good tone; and
- Occasional reminders of the virtues of consistent practice with an analytical approach.

Because few method books are entirely appropriate for a given student/teacher combination, it will be necessary to supplement almost any choice with other texts, professional resources, teacher-devised materials, and oral directions. Self-teaching manuals are especially valuable in this respect, because they provide continual reinforcement of new rhythms, fingerings, etc., through a variety of musical examples.

Instructional materials for advanced levels of study should include a fairly extensive exposure to the standard flute reper-

toire. Accordingly, the materials should contain representative selections from the major types and periods of composition, including solos, ensembles, and orchestral excerpts.

III. Teaching and Learning

BEGINNING LEVEL

A student's chances for success in playing a musical instrument are closely related to his or her work habits, scholastic ability, interest in music, aptitude for it, and to some extent, whatever experience s/he may have had with preband instruments. Performance on a flute or piccolo can also be affected by such physical characteristics as buck teeth, a protruding jaw, a teardrop or "Cupid's bow" formation of the upper lip, and wrinkled or severely and frequently chapped lips. In general, students with one or more of these characteristics will probably choose another instrument; but if they really want to play the flute and if they receive proper instruction, there is no reason why these physical conditions should prevent them from playing well.

It is wise to have students begin their lessons with the head joint alone, learning to blow and tongue in two registers. Four notes are possible—two with the end hole covered, and two with it open—and more can be produced by partially covering the hole with a finger, or by sliding a finger in and out of it. When the student can satisfactorily produce tones on the head joints, s/he will be ready to work with the complete instrument.

Technical problems in later years are often the result of awkward playing positions established during the first year. From the very beginning, then, the student should work toward a flute grip which is natural and well balanced between contact points. If s/he places his/her thumb approximately under his/her first and second fingers, the fingers will curve naturally to touch the center of the keys. Contact between the base of the right index finger and the key rods should be avoided. Proper positioning of the flute joints will also promote a correct grip, and this can be accomplished by aligning both the embouchure hole and the key rods of the foot joint with the center of the body keys.

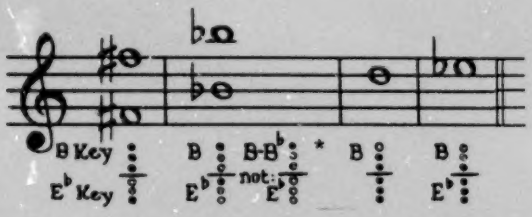
In addition, beginning flutists will have a greater chance for success if their music stands are placed at eye level; if they have folding stands for practicing at home; and if there is

enough space in ensemble seating to enable them to extend their flutes without interfering with other players or instruments.

Fingering

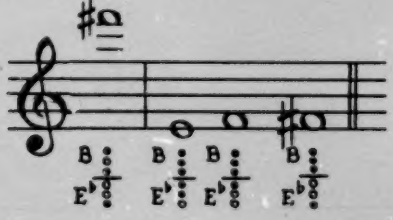
During the first year of study, special attention should be given to such recurrent problems in fingering as:

- f♯¹ and f♯²—which should be played with the third finger of the right hand, not the second;
- b♭¹ and b♭²—which should be learned as a 1-and-1 fingering; and
- d² and e♭²—which are often played with first octave fingerings (left index finger down), a situation that can be avoided by lifting the left index finger in each case.



* This might be taught later as an alternate fingering pattern when B♭ is not preceded by f♯³, b♮¹, or b♮².

Additionally, the student should:

- Guard against the habit of using second octave fingerings played as harmonics in place of true third octave fingerings;
- Prevent poor quality and intonation on the f♯³ by releasing the left thumb B♭ key; and
- Remember to depress the E♭ key with the little finger of the right hand for e¹, f¹, and f♯¹—especially when they are preceded by c¹, c♯¹, or d¹.

A taped "X" or some other simple outline drawn on the offending finger in the instances described above can serve as an effective visual reminder.

Breath Control

Beginning flutists often find it difficult to sustain phrases of reasonable length, either because they inhale through the nose rather than the mouth or because they use a lip opening that is too large. Explaining that air can be inhaled more efficiently through the mouth and using the analogy of a water faucet to convince the student that the airstream must be narrowed to avoid "draining" the lungs before the phrase ends could be helpful in solving the problem. In addition, the teacher might help the student to develop more efficient breathing patterns through specific exercises designed to increase his/her:

- Knowledge of forced expiration volume, and ways to increase it;
- Ability to check his/her own forced expiration volume;
- Kinesthetic awareness of the difference between breathing with the upper portion of the lungs alone and breathing with the lower lung areas as well;
- Ability to expand and contract the lower portion of the lungs during inhalation and exhalation;
- Kinesthetic awareness of the proper movements of the lungs and abdomen in diaphragmatic breathing;
- Ability to breathe diaphragmatically;
- Ability to prolong and control expiration; and
- Ability to apply more efficient breathing patterns to playing the flute.

Articulation

Another difficulty for beginning flutists is the use of the tongue. As indicated above, the throat and the mouth cavity are much like a water pipe with the lips for an opening and the tongue for a valve. Accordingly, the proper placement of the tip of the tongue is just behind the upper front teeth at the gumline. To preserve tonal continuity in articulated passages, the player must supply a continuous stream of air by letting pressure build behind the tongue and then releasing it slowly (or quickly, when appropriate) by drawing the tongue back. As it becomes necessary to produce longer, well-connected phrases, students should be encouraged to *push*

the air ahead of their fingers down the length of the flute or *spin* the air through the instrument. Verbal descriptions of this type might help them to grasp the concept of aggressive projection of tone, and therefore prevent such habits as:

- Tonguing between the lips (except when needed for a rare, sharp attack) and
- Constricting the throat or closing the glottis.

The syllable *tah* is normally used for articulation, but *dah* or *lah* has a softer sound and is preferable for beginning lessons. It virtually eliminates hard, explosive attacks; produces smoother legato effects; and lends itself to fast virtuoso articulations in later studies, because the speed of the notes gives the impression of staccato while the softness of the syllable retains most of the tone. For slower staccato passages, *tah* or any other open-vowelled sound will be sufficient. Only rarely should a tongue-stopped staccato such as *taht* or *daht* be used. For even when composers write staccato markings on a score, they usually envision notes that start with clean tonguing and end in a sudden decay of tone, and these effects are best produced by simultaneously pushing the diaphragm and releasing the tongue.

Tone Quality

Helping students to achieve a good quality of tone with their flutes or piccolos is one of the teacher's major concerns—for if the tone is underdeveloped, the notes will be out of tune, the third octave will be shrill, and the first octave will barely clear the podium. Poor tone, particularly if it is localized in a range of notes, may be caused by leaks in the instrument. Since the problem often stems from the right-hand keys, it can usually be solved by making screw adjustments which raise or lower connecting keys. Replacing a few of the pads may also help; but complete repadding by a competent repairman is generally a better solution—especially when the pads are made of plastic, because they tend to stick with age and do not seal well. In this instance, complete replacement with a bladder pad is the best alternative.

Tone quality can be improved in other ways as well. For example, if the tone is small and flat in pitch, the student might turn the instrument out to uncover more of the aperture and increase his/her breath support. If the tone is loud and rough, s/he is probably overblowing and should be able to correct the situation by dropping the jaw a bit and directing

the airstream more deeply into the flute. The "breathy" quality in tone can be lessened by a careful focus that adapts to each of the three registers. Reducing the size of the embouchure hole, tucking the corners of the mouth between the teeth, and pulling the upper lip down will add more edge to the low register. The sound of leaking air, a less frequent symptom of this characteristic, should be eliminated experimentally by having the student watch his/her airstream in a mirror as s/he:

- Raises and lowers the end of the flute;
- Turns the instrument slightly inward;
- Places the embouchure plate higher and then lower on the bottom lip; and
- Moves the flute a little to the left.

If the student has a Cupid's bow, or if his/her upper lip points down a little in the middle, s/he should either slide or rotate the flute to the left in order to take advantage of the natural curve of his/her mouth.

Musicianship

Of equal importance to learning the technical aspects of playing the instrument is the development of musicality. Toward this end, students should be exposed to flute literature during their very first year of study through simple melodies and folk tunes, easy solos with piano accompaniment, and ensembles. The ensemble material, in particular, will provide them with real proof of the crucial interdependence of rhythms and of the critical importance of tuning and accurate intonation.

Within the first year, students should learn how to tune their flutes to a^1 or a^2 for orchestra and to $b\flat^1$ or $b\flat^2$ for band. They should also learn how to read key signatures and accidentals—and at the same time develop an understanding of half and whole steps and their relation to major and minor scales. In addition, they should grasp the concept of beat and understand the relationships of downbeats and upbeats to common rhythmic patterns. Since these principles are closely related to note values, rhythm, meter, and meter signatures, they should be developed concurrently in each student's overall learning plan.

From the very beginning of their lessons in flute, students should form the habit of practicing daily with full attention to the task at hand and an intelligent approach to troubleshoot-

ing in technically difficult parts. In other words, they should *think while doing*; and the results will gradually make them aware that hard work pays, if that work is done with consistency and care. They should note and follow all directional signs. And they will need to "tune in," analytically, on their own playing. In this electronic age, tapes and records can provide excellent opportunities to analyze both student and professional performances for musicality, rhythms, pitches, intonation, and tone quality.

Most method books include examples of simple musical forms such as binary forms, ternary forms, rounds, theme-and-variation forms, etc. Since musical style generally appeals to young flutists, the teacher can easily discuss mood and the effects of tempo, dynamics, and articulation upon it. And if the discussions are reinforced by the students' attempts to render the composer's wishes as accurately as possible, even in early practice sessions, they will soon develop a firsthand knowledge of the effects of these elements on the expressive nature of the music. Beyond this, the students' natural intellectual curiosity should stimulate questions and additional activities through which they can learn more about the music, the composers, and the art of playing the flute.

INTERMEDIATE LEVEL

Fingering

Alternate fingering patterns can be very effective in helping students at the intermediate level to meet the demands of consistency and increased facility. Used with discretion, the second trill key can be a helpful addition to the e^2 fingering, particularly at exposed *piano* dynamic levels. Adding the fingers of the right hand and the third finger of the left hand to the $c\sharp^2$ will lower the pitch and give it resonance, but students who have difficulty with this pattern will find that nearly the same results can be achieved with the right hand alone. Using the second finger of the right hand, rather than the third, will make the $f\sharp^1$ and the $f\sharp^2$ more accessible when they are preceded or followed by e in rapid passages. Similarly, the double-thumb B♭ can be helpful in gaining facility in flat keys, although this form is awkward chromatically. The auxiliary B♭ key played with the side of the right index finger is useful in chromatics and in such combinations as b♮ to b♭ to g. It is light in action, and less demanding of perfect coor-

dination. But flutists in search of ever-easier fingerings should be reminded that, for accurate intonation, the trill fingerings are generally reserved for trills.

Articulation

During their second or third year, students can be introduced to compound tonguing. Because speed alone produces a staccato effect in double or triple tonguing, the short notes in fast passages must be played legato or a "sputtering" sound will result. The effect can further be avoided by practicing a relaxed *duh-guh* or *duh-guh-duh* slowly and at full tone, with care to achieve an equal definition of the *d* and the *g*. Gradual increases in speed can be governed through the use of a metronome.

In order to coordinate the adjustment of the embouchure to changing notes and registers, students may need special attention with regard to slurring. All too often flutists break the airstream, rather than blowing between and through the notes.

Vibrato

Since the production of vibrato involves the proper use of muscles in the diaphragm and in the throat, students who master the technique generally improve their tone. They also develop their ability to play controlled crescendos, decrescendos, and accents by using the diaphragm to pump gusts of air through the throat in a huffing manner. For this reason, intermediate students should receive the groundwork for vibrato whenever their basic tone is secure.

Exactly *how* vibrato should be learned is still a matter of discussion among competent flute instructors, the chief concern being the avoidance of either of two results—a fast, nervous, "nannygoat" sound or a slow, labored vibrato. Accordingly, the student must come to understand that vibrato evolves from a straight tone to a periodic fluctuation of pitch and volume that produces the characteristic sound from which the term *vibrato* is derived. In order to build a mature vibrato with six or seven regular fluctuations per second, s/he might begin by using the diaphragm to produce two or three slow, powerful pulses of air per second—with wide variances of pitch and volume. The student should then develop the ability to produce pulsations with the muscles of the throat.

This might be accomplished by coughing into the instrument at regular speeds of four, five, or six times per second—without moving the diaphragm. The result will be a series of brief, choppy sounds in an abrupt on-and-off pattern. Done properly, the movements will soon seem natural; the speeds will increase; and the student will gradually combine the two types of pulsation until the resulting sound is a mature vibrato. At some point in his/her learning activity, the student should be encouraged to experiment with the technique in easy, lyric solos at two, three, or four pulses per 1-beat note.

Some teachers have found that a whistling or singing approach of loud/softs on tied notes is useful in helping students to grasp the concept; and live and/or recorded examples of fully developed vibrato produced by the teacher, by fellow students, or by professional performers can be very effective either in and of themselves or in comparison with the learner's own attempts.

Tone Quality

The intelligent application of some basic principles of tone production to the position and *feel* of the instrument should enable students to avoid many of the pitfalls of flute-playing. For example, the flute should seem to hang from the player's lower lip; for if there is too much pressure on the lip, there will be a consistent lack of flexibility among the registers. In addition, each of the three octaves has a special embouchure position and feel:

- Above c^3, the corners of the mouth should push forward to form a small, flat, oval aperture which intensifies the air column and directs it down toward the opposite edge of the tone hole.
- In the middle register, an open, relaxed throat in a simulated yawn or *ah* will provide the necessary resonance and enlarge the lip opening a bit.
- Below c^2, the corners of the mouth should be stretched and the upper lip pulled down to form a wider, slitlike opening which directs the airstream almost horizontally across the tone hole, thus creating "edge" and carrying power in the weak upper partials.

If the student wears orthodontic corrective braces, s/he will encounter special problems with the flute. These can be lessened by relieving the pressure of the instrument against the lower lip and attempting to control the tone with the upper

lip and the corners of the mouth. The sensation will be like "pointing" the lips to play. In any event, students will benefit most from learning how to produce the best tones with their instrument through their own experiments in handling it. Suggestions for coping with this problem are included in *Orthodontics and Wind Instrument Performance*, an MENC publication described in the General Resource Listing on p. 148.

Ascending slurs to e^3 and $f\sharp^3$ are a frequent source of frustration. These notes speak more easily if they are played with an open throat (as in singing *awh*) and a wider opening of the jaw. Practice in harmonics is a useful remedy, and examples are available in many teaching texts; but inventing bugle calls is much more fun, and the activity provides a bonus in skill development as well.

Musicianship

As the students encounter music which demands greater degrees of finger facility, they will need special help in order to improve both dexterity and speed without dissipating the quality of tone through an overconcentration on the fingers. The metronome is a useful aid in controlling the development of speed. It can be set at tempos which are compatible with the student's level of achievement, and then reset for faster speeds in small and uniform gradations; or it can be set to click in subdivided tempos, such as 4/4 time converted to 8/8. Thus, with the teacher's unremitting care about the quality of tone, the students can use the metronome to establish their own goals, to measure their own progress, and to motivate their own activity. There are other ways of improving dexterity and speed. These include changing accents, changing rhythms (dotted to even or vice versa), and practicing backwards—a technique which works especially well with ascending scales or passages in the third octave. It is done by playing the last two notes of a passage, then the last three, the last four, etc., until all the notes have been played in that manner.

Because of technical problems and scheduling, the students' first exposure to ensemble work is often limited to playing with groups of fellow flutists. In subsequent years, however, they should gain experience with mixed woodwind ensembles and representative solos from the important periods of musical composition. Fortunately, there is a great deal of appropriate literature from which to choose.

At the intermediate level, the students should understand and be able to apply the following elements of music:

- Major, minor, and modal scales and arpeggios;
- Chromatic scales encompassing the entire practical range; and
- The 18th-century triad system.

They should also be ready for less common meters and more sophisticated rhythmic concepts, such as 3-against-2 and intricate beat subdivisions. The application of voice-leading as it affects the use of the sharp or flat accidentals, the recognition and application of double flats and double sharps, and the significance of dynamic contrasts* are all pertinent at this time. Finally, the students should become familiar with the chief forms of classical music (sonata-allegro, concerto, symphony, etc.) and have some degree of appreciation for the use of vibrato, tempo, articulation, and ornament in the interpretation of four major styles: Baroque, Classical, Romantic, and Modern.

At some point in their work, the students should be exposed to other flutes, ** both ancient and modern, and to similar or related instruments in the non-Western world.

ADVANCED LEVEL

In helping his or her students to become accomplished flutists, the instrumental music teacher will gradually change his/her role in the learning process from instructor to *catalyst*—particularly if s/he is not a flute specialist. In the difficult but infinitely more valuable role of catalyst, s/he can assist his/her advanced level students by encouraging them; by exposing them to high professional standards of tone and musical style through tapes and records; by helping them to identify and secure additional resources (including human resources and a variety of opportunities to perform), when and where they are needed; and by maintaining quality control through continued reinforcement of the ever-important fundamentals of flute technique and musicianship.

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* Electronic visual aids make it possible for the student to learn about dynamic contrasts through individual and/or group activity.

** The 112-page, illustrated checklist of the Dayton C. Miller collection is useful for this purpose. It is available without charge from the Music Division of the Library of Congress, Washington, D.C. 20540. Local resources should also be utilized.

Tone Quality and Intonation

Advanced students exhibit periodic regressions in the quality of their playing, which usually means that they have forgotten to apply one or more of the following principles:

- The lower lip should cover approximately one-third of the aperture in the first octave, and no more than half at high extremes of range.
- The lower lip should be rolled out over the aperture.
- The corners of the mouth should be pulled down or in between the teeth, with the jaw slightly open.
- There should be little or no pressure of the flute against the lower lip.
- In the low register, the upper lip should be extended downward to form a flat lip opening.
- In the high register, the lips should be pointed out over the aperture to form a small, round opening which directs the airstream down toward the opposite edge of the hole.
- The lip opening should never be wider than the embouchure aperture, and always centered above it.
- The throat should be open and relaxed in order to produce resonance from the head and chest (as in singing) with support from the diaphragm.
- Air pressure should be steady in the low register and increased in the high range.
- The lip opening should vary in size according to changes in volume, growing smaller as the dynamic level lowers but maintaining air support at all times.

Advanced level students are generally capable of learning some of the special techniques of virtuoso flutists. For example, pianissimo attacks in the high register can be facilitated by starting the tone from the lips as *puh*—so long as the technique is applied judiciously. Flutter-tonguing, which is scored in some 20th-century music, is another possibility. The extreme control exhibited by accomplished performers on diminuendos which reach the *ppp* level can be achieved by gradually slowing the vibrato to a complete stop before the tone ceases. Finally, the student can produce a dramatic morendo by pushing the foot end of the flute away from his/her body as the tone diminishes, a technique which also helps to prevent the pitch from sagging.

The special effects produced by professional performers inevitably require a greater use of lung capacity, more efficient breathing patterns, and prolonged, carefully controlled

expiration. Taking two quick breaths instead of one is an interim method of securing the amount of air needed for long phrases; and there are other ways to develop forced expiration volume. For example, students might pretend that they are creating small tornadoes inside their flutes in the form of eddies of air that produce the tone. The airstream developed by a professional flutist blowing f^3 at a dynamic level of *fff* was once clocked at 100 m.p.h., which is hurricane speed!

Musicianship

Advanced level students should expand their repertoires by adding standard orchestral flute solos such as Debussy's *Afternoon of a Faun*, Brahms' *Variations*, and Stravinsky's *The Rite of Spring*. At the same time, they should become increasingly aware of musical form and develop a greater sophistication in their understanding of it; and their knowledge of theory should include the fundamentals of serial music and atonality.

Before their work at the advanced level has been completed, the students will have become *flutists* in fact as well as in name. They will identify with noted performers throughout the world and perceive their contributions in terms of the unique coloration and timbre of the instruments they play. They will begin to understand that performance is one of the highest forms of communication; and when this happens, they will feel a sense of fulfillment in their own playing and the conscientious rendering of the composer's musical intent. They will seek opportunities for solo, small ensemble, and orchestral performance; and their personal library of records, books, and tapes will grow as their repertoires grow—in quality as well as in number.

IV. Selected Resource Materials

BOOKS AND PAMPHLETS

Bate, Philip. *The flute: a study of its history, development, and construction*. New York: W. W. Norton and Company, Inc., 1969.

Berger, Melvin. *The flute book*. New York: Lothrop, Lee and Shephard Company, 1973.

Written for young flutists, with appropriate vocabulary, diagrams, and photographs. Contains pertinent information

on the care and assembly of the flute, acoustical principles of tone production, intriguing stories about flute-making and flutists of the past, and modern career opportunities.

Boehm, Theobald. *The flute and flute-playing in acoustical, technical, and artistic aspects;* 2d ed. trans. by Dayton C. Miller. New York: Dover Publications, Inc., 1964. pa.

Contains detailed material about the instrument and how it should be played, plus biographical notes about Boehm, a list of his musical compositions, a short bibliography, and more than 50 musical excerpts and illustrations.

Chapman, Frederick. *Flute technique;* 3d ed. New York: Oxford University Press, 1958. Order from Oxford University Press, Inc., 1600 Pollitt Drive, Fair Lawn, New Jersey 07410.

Includes an extensive listing of chamber music for flute.

The Dayton C. Miller flute collection: a checklist of the instruments, ed. by Laura Gilliam and William Lichtenwanger. 1961. Available without charge from the Music Division of the Library of Congress, Washington, D.C. 20540.

Contains a complete and informative description of the instruments collected by this famous physicist, including specific antique flutes.

Delaney, Charles. *Teacher's guide for the flute.* 1969. Available without charge from the Selmer Division of the Magnavox Company, P.O. Box 310, Elkhart, Indiana 46514. 40-page pamphlet.

Uses concise text, illustrations, diagrams, and fingering charts to present techniques for playing the flute. Includes a discussion of the production of vibrato and its application to music, with exercises and musical examples that are lucid. Bibliography contains representative literature and studies.

DeLorenzo, Leonardo. *My complete story of the flute: the instrument, the performer, the music.* New York: Citadel Press, 1951.

Contains memoirs of his life as a flutist, a teacher, and a composer; short biographies of contemporary flutists and performers in the past; and a brief discussion and history of the flute.

Educational materials on flute-playing and performance. 1971. Available without charge from W. T. Armstrong Company, Inc., 200 East Sycamore Street, Elkhart, Indiana 46514.

Free pamphlets on master lessons by Cavally, alto flute

literature, flute care and maintenance, comprehensive trill fingerings for flute (Cavally), flute tonguing and articulation, position and balance, vibrato, tone production and resonance, the piccolo, and building a flute repertoire.

Also available: *The Flute: A Collection of Educational Monographs.*

Fitzgibbon, Henry. *The story of the flute, being a history of the flute and everything connected with it.* 1928. Available from Finch Press Reprints, 337 East Huron Street, Ann Arbor, Michigan 48108.

Contains a discussion of the historical aspects of the flute, and lists of music written for the instrument.

Franz, Frederick. *Metronome techniques.* 1964. Available from the Franz Manufacturing Company, Printers Lane, South Boulevard Business Park, New Haven, Connecticut 06519.

Describes the uses of the metronome in establishing tempos, developing skill in cross-rhythms, and teaching vibrato. Includes a brief history of metronomes and many helpful suggestions for effective use in practice.

Moore, E. C. *The flute book.* Kenosha, Wisconsin: Leblanc Publications, Inc., 1962. (The Leblanc educational series).

———. *The flute and its daily routine.* Kenosha, Wisconsin: Leblanc Publications, Inc., 1962.

Musique pour flute. Paris, France: Alphonse Leduc, 1951. Available without charge from M. Baron Company, P.O. Box 149, Oyster Bay, New York 11771.

A small, hardcover thematic booklet which contains single-sheet excerpts from the repertoire of the National Conservatory of Music in Paris. Includes information about the flute, plus diagrams and illustrations.

Pellerite, James. *A handbook of literature for the flute.* Bloomington, Indiana: Zalo Publications, 1965.

A graded collection of flute methods, exercises, solos, and ensemble literature which includes brief, descriptive comments with each selection and a bibliography. A valuable sourcebook for flute students and music educators.

———. *A modern guide to fingerings for the flute.* Bloomington, Indiana: Zalo Publications, 1964.

A complete and authoritative source of basic fingerings to e^4, trill fingerings, harmonics, tremolos, and altered fingerings. Recommended for serious flutists and as an addition to the school music library.

———. *A notebook of techniques for a flute recital.* Bloomington, Indiana. Zalo Publications, 1967.

A companion booklet to Coronet recording No. 1291, *James Pellerite Plays Flute.* It contains a detailed discussion, by measure number, of the performance practice and style of specific works by Schubert, Varese, Wilder, Rogers, Koechlin, Mouquet, and Boehm. (See annotation on p. 26).

Putnik, Edwin. *The art of flute playing.* Evanston, Illinois: Summy-Birchard Company, 1970. (The art of . . . series). pa.

Written specifically as a guide for instrumental music teachers who are not flute specialists. Part I deals with the basic principles of flute technique and pedagogy—including embouchure, common problems, and breath control. Part II deals with the problems of advanced students—including compound articulations, tone development, vibrato, style, and performance. Contains musical examples, diagrams, and charts in profusion.

———. *Flute pedagogy and performance.* Chicago, Estes Music Publishing Company, 1955.

———. *Flute pedagogy, part I.* Tampa, Florida: Presto Music Service, 1955. Available from Derby Music Service, 5143 Busch Boulevard, Tampa, Florida 33617.

Basic techniques of flute-playing clearly presented.

Quantz, Johann. *On playing the flute.* A complete translation, with an introduction and notes by Edward R. Reilly. (Original title: *Versuch einer Anweisung die Flöte traversiere zu spielen).* London, England: Faber and Faber, 1966. Available from the Free Press (Crowell, Collier and Macmillan, Inc.), 866 Third Avenue, New York, New York 10022.

Contains information about flute technique and Baroque musical style as perceived by 18th-century Quantz.

Rockstro, Richard. *A treatise on the flute;* 2d ed. reprint. London, England: Musica Rara, 1967 (c1928). 1st ed. 1889. Available from Rubank, Inc., 16215 NW. 15th Avenue, Miami, Florida 33169.

A technical, detailed source of information about the construction, history, and practice of the flute for persons who are particularly interested in the evolution of the flute and its acoustical properties. Part III deals with the art of flute-playing; Part IV consists of biographical notes and critical notices about 60 eminent flutists between 1640 and 1868. Much of the material in Part IV was translated from German and Italian by Georgina M. Rockstro.

Welch, Christopher. *The history of the Boehm flute;* 2d ed. London, England: Rudall-Carte, Ltd. 1892 reprint. Available from Pietro Derio Music Publications, 133 7th Avenue South, New York, New York 10014.

Includes a listing of Boehm compositions for the flute family.

Wilkins, Frederick. *The flutist's guide.* Elkhart, Indiana: Artley, Inc., 1963.

An LP record and text combination that treats all aspects of modern flute performance, lists recordings of flute repertoire, and includes graded lists of flute literature. Recommended for flute students, instrumental music teachers, and as an addition to the school music library.

METHODS

Altes, Henri. *Complete methods of the flute,* ed. by F. Caratge. Paris, France: Alphonse Leduc, n.d. 2 vols. Distributed by M. Baron Company, P.O. Box 149, Oyster Bay, New York 11771.

Includes exercises plus a running commentary on the basic principles of flute-playing.

Brooke, Arthur. *The Brooke method for flute.* Cundy-Bettoney, 1942. Bk. I, Bk. II, and a composite of the 2 vols. Distributed by Carl Fischer, Inc., 62 Cooper Square, New York, New York 10003.

Includes a discussion of the techniques of flute-playing.

Flute packet. Levels 1 and 2. Columbus, Ohio: Charles E. Merrill Publishing Company, 1973. (Learning unlimited band series, nos. 1224 and 1232).

Consists of "illustrated, colorful instruction books coordinated with modern cassette teaching tapes" designed for individualized or group instruction, accelerated learning, or remedial aid. Practice material includes "lively, popular songs, many copyrighted and never before available in other methods programs."

Hotteterre, Jacques. *Rudiments of the flute, recorder, and oboe,* trans. by Paul Marshall Douglass. (Original title: *Principes de la flute*). New York: Dover Publications, Inc., 1969. pa.

Includes elements of 18th-century ornamentation.

Kincaid, William (in collaboration with Claire Polin). *The art and practice of modern flute technique.* 5 vols. New York: MCA Music Company, 1967.

In addition to traditional method material, the contents include a number of ensembles, supplementary discussions and diagrams on the art of flute-playing, clues to efficient practice, and a detailed analysis of ornaments.

LeJeune, Harriet. *Flutist's manual.* Evanston, Illinois: Summy-Birchard Company, 1964.

Explains the basic principles of flute-playing, includes a fingering and trill chart to d^4, and uses musical excerpts to correlate discussions of alternate fingerings to the repertoire. Offers practical solutions to the omnipresent problem of efficient use of practice time.

Maquarre, Andre. *Daily exercises for the flute.* New York: G. Schirmer, Inc., 1899.

Contains brief comments on practice techniques and identifies pitfalls to be avoided.

Stokes, W. & R. A. Condon. *Illustrated method for flute;* 2d ed. Distributed by Trio Associates, P.O. Box 2752, Culver City, California 90230.

Presents the art of flute-playing methodically, scientifically, and comprehensibly through the resources of modern photography, graphics, and technology. Information based on recent research in the acoustics of the flute, the physiology of flute-playing, and the authors' experience in teaching and performing. Includes systematic daily exercises in contemporary idioms with unique ideas on the application of practice methods.

———. *Special effects for flute.* 1970. Distributed by Trio Associates, P.O. Box 2752, Culver City, California 90230.

A creative presentation of the flute techniques demanded by composers of avant-garde and popular music in improvised style. Includes instructions for producing key vibrato and quarter tone trills, hollow tones, whistle tones, singing-and-playing, and a mute for the flute.

PERIODICALS

Flute forum. W. T. Armstrong Company, Inc., 200 East Sycamore Street, Elkhart, Indiana 46514. Robert Cavally, editor. Published quarterly.

A compilation of pamphlets which deal with various aspects of flute-playing.

FILMS AND FILMSTRIPS

An introduction to the flute. (2 color/sound filmstrips, with a teacher's guide). Cat. No. 722. Warren Schloat Productions, Pleasantville, New York 10570.

Flutist Harry Moskovitz explains the principles of sound production and fingering. Useful for beginning level students, or as an introduction to the flute in general music or instrumental music classes.

The flute. (film). World Mirror-Realist Productions, Ltd., in association with the Educational Foundation for Visual Aids, Great Britain. Distributed by Bailey-Film Associates, 11559 Santa Monica Boulevard, Los Angeles, California 90025. 1966. 22 min. sound. color. 16mm. (We make music series).

Flutist Richard Adeney discusses the development of the flute over a ten-century period including how the characteristic sound of this member of the woodwind family is produced, the gradual increase in the number of holes in the body, and how the use of keys ultimately made it possible to play a complete chromatic scale. Through examples from the works of Schubert, Mozart, Gluck, and other internationally known composers, Mr. Adeney demonstrates the full range and color of the flute. Appropriate for junior/senior high school, college, and adult students.

Flute and piccolo care. (filmstrip). Encyclopaedia Britannica Educational Corporation, 425 North Michigan Avenue, Chicago, Illinois 60611. 1966. 46 frames. sound. color. 35mm. (Filmstrip series no. 11020, band instrument care).

Vivid closeups of each step emphasize the intricacies of caring for a flute or piccolo. Developed by teachers, the procedures are well within the capability of students.

Flute-playing—a study with Mark Thomas. (film). W. T. Armstrong Company, Inc., 200 East Sycamore Street, Elkhart, Indiana 46514. 24 min. sound. color. 16mm.

Compiled from Mr. Thomas' clinics and appropriate for use with beginning, intermediate, and advanced level students.

Set one. (4 color/sound filmstrips, with a teacher's guide). Warren Schloat Productions, Inc., Pleasantville, New York 10570. Available only as a set.

In one of the four filmstrips, flutist Harry Moskovitz exhibits his personal collection of antique flutes and ancestors of the flute; describes the contributions of Theobald Boehm; and demonstrates the five members of the modern

family of flutes, the electrically amplified flute, and tuning procedures. The other items in the set feature violinist Michael Rabin, electronic music composer Morton Subotnick, and the Guarneri String Quartet.

RECORDINGS*

A Baroque recital. Coronet S 1505. James Pellerite, flutist, with Wallace Hornibrook on the harpsichord.

Flute contest music. Lanier Records. Selmer Division of the Magnavox Company, Box 310, Elkhart, Indiana 46514. 3 vols. Charles Delaney, flutist.

The selections range from easy to difficult, and were chosen for their musical and educational values. In each recording, the music on side A was performed on a student model flute and the music on side B was performed on a sterling silver artist model. Suggestions with regard to the stylistic and technical aspects of performing each piece have been included in the program notes on the record jackets.

The flute family. MRS 23 396. Mark Educational Recordings, Inc., 4249 Cameron Road, Buffalo, New York 14221. Harry Moskovitz, flutist.

Unaccompanied flute solos which demonstrate each member of the flute family, including the bass flute and A♭ sopranino. Notes on the record jacket provide the student with pertinent information about each instrument and about the music.

The flute in its showcase of styles (Golden Crest Series, RE 7023) and *A flute recital* (Golden Crest Series, RE 7010).

James Pellerite's *A Notebook of Techniques for Recorded Flute Recitals*, Vol. II: "Performance Methods for Flutists" is a companion book for these two records. Part I applies to the repertoire on RE 7023, and Part II applies to RE 7010. Detailed analysis of each composition includes such topics as concepts of flute-playing, articulation, principles of ensemble-playing, and general musicianship. Literature includes Poulenc's *Sonata*, Telemann's *Suite in A minor*, Hue's *Fantasie*, and Mozart-Pellerite's *Larghetto for Alto Flute*. The text is programed for advanced level students.

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* The following items are representative of the types of recorded material that can be most useful for teachers and/or students. The selection is far from complete. For a more comprehensive listing, consult the instrumental music sections of such catalogs as the *Schwann Artist Issue* produced by W. Schwann, Inc., 137 Newbury Street, Boston, Massachusetts 02116.

Flute solos with band. Coronet S 1724. James Pellerite, flutist, with the Indiana University Wind Ensemble.

Includes such popular selections as Chaminade's *Concertino* and Kennan's *Night Soliloquy*.

Flutists' showcase. Crest LP 4020. Available from the Conn Corporation, 1101 East Beardsley Street, Elkhart, Indiana 46514.

Solo and ensemble material performed by renowned flutists Blaisdell, Kart, Kemp, Moskovitz, Panitz, Pellerite, and Wilkins.

James Pellerite plays flute. Coronet LP 1291.

In a companion booklet (*A Notebook of Techniques for a Flute Recital*—Vol. I, available from Zalo Publications, P.O. Box 913, Bloomington, Indiana 47401), Mr. Pellerite discusses the selections he plays.

Music for the flute. Columbia LP-ML 4339. William Kincaid, flutist.

Includes such contest pieces as Dutilleux's *Sonatine*, Coplet's *Reverie and Petite Valse*, Marcello's *Sonata in F*, Saint-Saen's *Air de Ballet*, and Hindemith's *Sonata*.

Music from the greats: solos for the flute and piano. Stereo MMG 35851. Distributed by Mark Educational Recordings, Inc., 4249 Cameron Road, Buffalo, New York 14221. Robert Mols, flutist.

Recordings with a coordinated study guide designed to enrich the intermediate level flutist's appreciation of music through reading, listening, and performing. Includes medium easy to medium difficult solos from four great eras in music, beginning with the Baroque. Appropriate for students, teachers, music libraries, and multimedia learning centers.

Music minus one. Available from 43 West 61st Street, New York, New York 10023.

A series of units consisting of printed solo flute parts plus LP recordings of a woodwind quintet minus flute, a band minus flute, an orchestra minus flute, a string chamber music group minus flute, and a piano accompaniment for flute. Newer recordings in the set include a complete performance of the work(s) on one side, and the same performance minus the flute part on the other. Selections range from beginning to advanced levels of difficulty.

Robert Willoughby, flutist. Coronet LP 1244.

Includes such Grade 5 and Grade 6 NYSSMA solos as the Hindemith and Poulenc sonatas and Faure s *Fantasie*.

Sarah Baird Fouse—solos. Coronet LP 1245.

Includes works by Piston, Quantz, and Scott.

Twentieth century music for flute. MHS 906 stereo. Available from the Musical Heritage Society, Inc., 1991 Broadway, New York, New York 10023. Jean-Pierre Rampal, flutist.

Includes sonatas by Prokofiev and Poulenc, plus Debussy's *Syrinx*.

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I. Introduction

HISTORICAL BACKGROUND

The oboe is the soprano voice in a family of conically bored, double-reed orchestral instruments. Historically, it evolved from the *shawm* and the *cromorne* (G. Krummhorn), two double-reed instruments that were important between the 13th and 17th centuries. The modern oboe is a direct descendant of the French *hautbois* (*haut*, meaning "high" and *bois*, meaning "wood"), which dates from the latter half of the 1600's. The hautbois had a 2-octave range from c^1 to c^3, including all semitones. Despite the open tone holes and the unsophisticated skeletal keywork that were characteristic of the period, the instrument can readily be identified as the immediate predecessor of today's oboe. Refinements and practical improvements during the next 200 years resulted in an open-ring "conservatory system" oboe that has remained substantially unchanged in terms of range, keywork, and general appearance since 1860. Another modification, the covered-hole "plateau system," is generally preferred by professional players. In its present form, the oboe has a practical range of 2½ octaves from b♭ to f^3, with a great number of alternate and trill fingerings.

The other members of the oboe family are the oboe d'amore in A (alto), the English horn in F (tenor), the baritone oboe in C, and the Heckelphone in C (bass). These instruments are similar in appearance; but unlike the oboe, all have a bocal, or crook, and a pear-shaped bell.

SELECTION, CARE, AND REPAIR

The Instrument

At the present time, oboes range in price and quality from $300 for the least sophisticated plastic models to more than $1,000 for the most elaborate French or American professional models. In making a choice, it is therefore wise to engage the help of a professional oboist who knows where and how to select an instrument which is appropriate for the particular needs of the student. Professional advice may reduce the number of technical problems that might arise as the instrument is used.

To some extent, the selection depends upon the grade level of the student who will play the instrument. For example, standard models with a minimum number of extra keys are recommended for beginning oboists in elementary and junior high school. Plastic oboes of this type are generally durable and are acceptable as initial instruments—if their intonation, response, and tone quality have been approved by an expert. Students in high school, however, should have wooden oboes with optional keys. The F resonance and low B♭ keys are essential, and the following keys are highly desirable: the left F, low B to C♯ slur linkage, and the A♭ to B♭ trill keys. The automatic octave key should be avoided, as it is chronically unreliable and it eliminates some good third octave fingerings and harmonics. The plateau system or closed hole model with a semiautomatic octave key (standard equipment) is preferred. In general, the best instruments are made by manufacturers that specialize in oboes.

It is important for students to develop conscientious habits in caring for their instruments. New oboes require particular attention, especially with regard to cleaning and temperature changes. For example, the entire surface of the bore should be thoroughly cleaned with a turkey feather or a commercial swab after each playing, and whenever there is an accumulation of moisture. If a swab is used, it is important that it reach the entire surface of the conical bore. The fine adjustments, pads, and springs should be checked at least once a year by a qualified repairman, and more often than that if the instrument is subject to hard use. A wooden oboe should be kept at as constant a temperature as possible because sudden changes can crack the wood, particularly in the top joint. In addition, a cold instrument should be warmed *from the outside in* rather than the reverse, as breathing warm air through the bore may cause it to expand while the outside is still in a contracted condition, thus increasing the likelihood of cracking. If the oboe does develop a crack, it should be pinned immediately by an expert repairman in order to prevent the crack from becoming longer and deeper. If the crack goes through a tone hole, an insert or bushing must be installed when the instrument is pinned or a good seal will be impossible. The procedure is fairly expensive, but it usually results in the oboe playing as well as it did before cracking. If the local instrument repairman is not an expert in oboe, it is wise to ask a professional oboist for a recommendation.

The Reed

The selection of a suitable reed is a prime consideration for the student as well as the professional oboist. There are three main types from which to choose:

- Long-scrape cane reeds,
- Short-scrape cane reeds, and
- Synthetic reeds.

The long-scrape reed (a reed that has been scraped over most of the length of the exposed cane) is the type used by most American oboists primarily because it is quite flexible and can produce the rich, smooth, and mellow tone that is presently considered so desirable. Professional performers are the best source for this type of reed, since it is not readily available on the market. Given specific information, they should be able to suit a reed to the student and have it made to the same high standards they require for their own instruments. Most commercial distributors sell short-scrape reeds, despite the fact that this style tends to hamper the free flow of tone production and is characteristically harsh, brittle, reedy, and even metallic in sound. Synthetic reeds, which are made from material other than cane, are often sold with the claim that one synthetic reed will outlast several cane reeds. The claim is justified, but the value of it is greatly outweighed by the high price and inherently poor tone quality of the reed. Such reeds also fail to respond to normal adjustments by scraping. However, because of their more rugged construction, they are sometimes desirable for beginning students.

Some suppliers offer a miniature single-reed mouthpiece built on an oboe reed tube. Due to its greatly reduced size in comparison with the mouthpiece of a clarinet, its desirability for doubling, or for helping a player to switch from one instrument to the other is questionable at best. These devices are wisely avoided.

For reed adjustments, the oboist should have a reed-scraping knife, a chopping or cutting block (billot), a plaque, a piece of fishskin, and some clear nail polish. Among the major problems and their probable solutions are the following:

- A reed which is too open, too stiff, and therefore hard to play can be improved by scraping the back of it on either side of the spine. This will close the reed a bit, and general scraping of the tip and of the thicker area behind the tip will ease resistance as required.

- A reed which is too closed can usually be played easily enough, but often suffers from volume limitations or difficulty in low register playing. Trimming about 1 mm. from the tip may help, or—if this is not sufficient—the reed can be opened a little more by *gently* pinching the flat sides of the tube at the winding with a pair of pliers. Inserting a mandrel into the tube before pinching it with pliers will prevent accidental crushing and also help to reshape the tube properly.
- A reed which fails to produce a sound, although appearing to be intact and in proper adjustment, may give evidence of air leaking out between the blades. In this case, a 1½ × ¾-inch piece of fishskin should be wrapped around the bottom of the cane portion of the reed, overlapping the winding. The whole area may be coated with clear nail polish to insure permanent adherence to the reed.

Visibly damaged reeds and those which no longer play because of age and wear should simply be replaced. Depending upon the nature and quality of the cane, most reeds will survive at least 15 to 20 hours of playing. Frequently, however, debris will accumulate inside and the reed will fail to respond. This material can usually be removed with a thin pipe cleaner, stripped clean of lint and drawn through the reed *from the bottom to the top.*

Single-edge razor blades are *not* recommended for scraping reeds because they are awkward to manipulate and often produce mutilated reeds and cut fingers. Scraping should be done with a commercial reed knife, kept razor sharp. The tips may be chopped with a razor blade, but only as an economical alternative to a chopping knife, and never with the easily damaged edge of the scraping knife. More detailed information can be found in Sprenkle and Ledet's *The Art of Oboe Playing* (see annotated reference on p. 47 of this publication).

TUNING PROCEDURES

The oboe may be tuned to a^1-440 cps in a fairly simple procedure which involves pulling the reed out when the tone is sharp, and pushing it in when the tone is flat. If the pitch is flat over the entire range when the reed is pushed in, the reed tube should be shortened by cutting about 2 mm. from the corked end. Trimming the tip is a common remedy for

flatness; but unless the reed is soft and unstable, the trimming process leaves it stiff and hard to play. Shortening the tube is generally a better solution, because it only affects intonation and leaves the reed free-blowing and intact. Consistent sharpness results from performance problems (e.g., constricted breathing, pinching the reed) more often than from difficulties with the instrument or the reed, and steps taken to correct these faults will also help in bringing down the pitch. If the problem does stem from the reed, scraping the heart and spine tends to lower the pitch. The reed should "crow" at an octave c^2–c^3, a characteristic which can be used as a general check on pitch.

II. Method Criteria

The primary concern in selecting instructional materials should be the degree to which they illustrate real, practical relevance to:

- Anticipated instrumental requirements, and
- The development of a true sense of musical self-awareness in the students.

In music, each instrument plays a unique role which embraces many concepts and skills. The learning materials should therefore provide appropriate tools for developing the students' physical ability to play the oboe, while stimulating within them an active awareness of the rewards and responsibilities of being a musician. Accordingly, methods for teaching oboe should deal effectively with overall musicianship, lyrical and tonal aspects, and technical development. In addition, both the materials and the approach should have sufficient appeal for the students to maintain their interest and enthusiasm.

A useful method for oboe should include initial emphasis on the rudiments of playing and continued stress on fundamentals through all levels of difficulty. Both the pattern and the pace of instruction should be geared toward helping students to gain a firm foundation in each area of study before going on to the next, and then to reinforce their newly acquired skills and understandings. In terms of content, the method should provide sufficient information, examples, and practice exer-

cises to enable students to identify and solve characteristic problems of the oboe. Since individual texts are rarely equipped to meet all instructional requirements, it is useful to work with several books, techniques, and resources—including solo and ensemble literature—at all stages of learning development. It is important to remember that whether the learning experience is an interesting and effective one or a seemingly pointless exercise in drudgery is less dependent upon the materials than upon the teacher who selects and interprets them.

III. Teaching and Learning

BEGINNING LEVEL

It is desirable for beginning oboists to have had prior musical training, although not necessarily with another woodwind instrument. The inherent difficulties are more easily surmounted by beginners if they can read music and have begun to think musically. A year or two of experience with the clarinet, the flute, or the saxophone is not always an advantage, however; for despite the fact that one can finger notes and support a tone on a woodwind instrument, the process of adapting to another hand position, fingering system, embouchure, and breathing pattern is troublesome at best and can be detrimental to the development of basic skills in oboe. This is particularly true in situations where the student continues to play his/her former instrument. However, if students have a strong desire to learn the oboe, either in addition to or as a change from an earlier choice, it is advisable to let them do so.

Early progress is often slow and sometimes discouraging for young oboists. For this reason, and because some beginners tend to be less careful with equipment, it is wise to postpone instruction until the student's physical growth, coordination, and patience are sufficiently developed to make the experience both pleasurable and meaningful. In general, a student who is "ready" can accomplish more in a given period of time than one with comparable potential who begins to work too soon. Regardless of age, however, the student should be in good health, particularly in terms of his/her respiratory and circulatory condition. Fairly even upper teeth are advanta-

geous in that they make it possible for the student to draw a generous amount of upper lip into the mouth and around the reed. Large, irregularly spaced or protruding teeth can hamper the development of an effective embouchure, although a number of performers have satisfactorily overcome conditions that were more adverse than these. Braces on the teeth are another type of hindrance and, while they will not prevent students from playing the oboe, it is often better to begin lessons *after* the braces have been removed. This topic is fully explored in *Orthodontics and Wind Instrument Performance*, an MENC publication described in the General Resource Listing on p. 148.

During the first year of study, young oboists should develop skills and understandings in three major areas: tone production, effective use of embouchure, and fingering. For obvious reasons, the first two items are always interrelated.

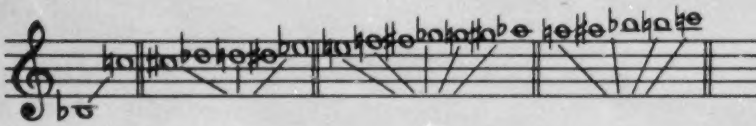
Tone Production and Embouchure

From the beginning, oboe students should work toward the ability to support a freely exhaled column of air, using the diaphragm. Exercises specifically designed to develop efficient breathing habits are essential. These and practice in producing long tones in a comfortable register and at various dynamic levels should be included in every learning session. It will be easier for students to breathe deeply if they stand while they play. When sitting is required, as in ensembles, they should sit tall, as though they were standing. Students should also begin to coordinate the embouchure and diaphragm to help control the pitch, volume, and quality of the tones they produce.

Fingering

Learning to finger the oboe requires a simple, understandable chart. The type showing a diagram of the oboe for each note, with the appropriate keys and holes colored black, is preferred. A correct, comfortable hand position should be developed, in which the fingers of the left hand are placed lightly on the keys, with the wrist tilted slightly toward the body. This causes the fingers to cover the holes on the top joint at a slight angle, rather than perpendicular, to the oboe. The appropriate choice of octave keys or half-hole fingerings should be required of the student at all times.

Standard Use of Octave Keys and Half-Hole Fingerings



No octave keys	Half-hole *only*	Thumb octave key (1st) *only*	2d octave key (side) *only*

In addition, students should begin to grasp the importance of efficiency of movement, especially with regard to fingering and tonguing. The fingers should never be more than ¼" above the keys, their contact with them always light and relaxed. The tongue should also be relaxed, and it should move as short a distance as possible when tonguing the reed.

Intonation

Most notes on the oboe are capable of being altered as much as a third because of the particular characteristics of the reed and embouchure. For this reason, beginning level students should develop a discriminating ear and the ability to use breath and embouchure to correct those intervals that are out of tune. Work on octaves and fifths is especially helpful. Rolling the reed and lips inward over the teeth, with a slight downward pressure on the lower jaw, will raise the pitch. The opposite actions will lower it.

Articulation

Tonguing on the oboe tends to produce a crisper and more brittle separation of notes than on other woodwind instruments. As they study the technique, beginning level oboists should be made aware of this characteristic and ultimately learn to tongue notes at maximum length (legato tonguing), at minimum length (staccatissimo tonguing), and at all intermediate lengths. Since oral conformations vary from one person to another, students will have less difficulty with the process if they touch the reed with the part of the tongue which seems most natural to them. In general, tonguing on the oboe is smoothest and most easily accomplished with the syllable *doo*, especially in the lower register; but in cases which require short, crisp notes, the syllable *too* is more effective.

The universal benefits of scale work apply to beginning oboists as well as to experienced players. Since beginners often play in a disconnected, choppy manner, it is advisable to have them slur their scales until they can consistently play a well-connected group of uniform notes. Major scales should be played for two octaves wherever possible; but students should be made aware of the fact that practice over an extended range requires special attention to embouchure and breathing in order to maintain good intonation, volume level, and tone quality throughout the scale patterns. Students should learn to recognize simple phrases in music and adjust their breathing patterns in a manner consistent with the phrasing requirements.

Tone Quality

At beginning levels of development, students should learn the basic principles of breathing and support. In particular, they must come to realize that nearly all the physical energy required for playing the oboe is produced by the muscles of the diaphragm. The muscles activate a stream of air which moves upward through a relaxed, open throat and out through the mouth as effortlessly as if the player were vocalizing with the syllable *loo*. The airstream ultimately vibrates the blades of the reed and the sound is produced. For this reason, students must learn to support a steady column of air with the diaphragm while using the muscles of the embouchure to maintain a constant, unwavering pitch and a pleasing quality of tone. The embouchure should be circular in shape, with the corners of the lips drawn together, the jaws widely separated, and the lips drawn in over the teeth in an inverted pucker or whistle. Students may develop a proper embouchure more easily if they think of the lip and facial muscles as exerting pressure inward toward the reed while the teeth pull apart, away from the reed, as when drinking a thick milkshake through a large straw.

It is advisable for beginners to practice long tones and interval exercises on the reed alone (without the oboe) until they exhibit reasonable control over the device which actually produces the sound. In this way, they will be better equipped to make the reed/embouchure adjustments required for smooth, in-tune playing. Low pitches, such as those in the first octave of the oboe, are best produced by playing on the tip of the reed alone. For higher notes, "rolling-in" adjust-

ments should be made, with the fundamental low position as a point of departure and reference.

Musicianship

Beginning level students should become familiar with key signatures, with scale structures, and with musical and rhythmic notation in general. They should come to realize the value of a slow and deliberate warmup before every practice session or performance, both as an aid in toning the muscles and as an opportunity for listening. And they must grasp the importance of controlled relaxation *while playing.*

Ideally, students should begin to develop a sense of discrimination about their performance. A sound criterion for self-evaluation is the student's own concept of beauty--beauty as s/he perceives it. The concept will change as the student changes, with exposure and experience; but being aware of and striving to achieve what s/he considers to be a beautiful tone, a beautiful phrase, or a beautiful performance will establish a highly artistic, yet flexible standard against which s/he can judge his/her musical efforts. Eventually, the student will come to realize that all elementary skills and achievements are not ends in themselves, but rather tools which can be used for making music.

Motivational experiences are particularly important at the beginning level of instruction in order to maintain interest and general progress. For this reason, students should be involved in ensemble playing as early as possible; they should have ample opportunity to hear live and recorded performances at their level of interest by serious professional musicians; and they should listen critically to their own performance, both on tape and as they play. Finally, the students should become aware of the necessity for conscientious practice habits, and should observe a diligent practice schedule.

INTERMEDIATE LEVEL

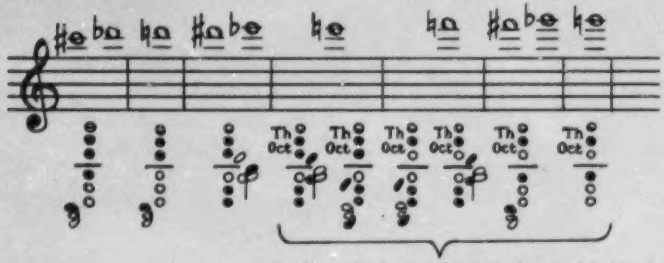
Tone Quality

At the intermediate level, students should produce a pleasing quality of tone most of the time. They should be able to control the sound at all dynamic levels and, in most cases, sustain long tones easily for extended periods, averaging 30 to 45 seconds. With correct breathing and effective use of the

embouchure, the students' endurance should improve and fatigue become less and less a problem. Students should feel comfortable when playing on the reed alone, and should have control over its pitch in interval exercises. If they are notably deficient in areas of pitch, volume, or tone control, particularly in slow passages, intense work on sustained lyrical etudes over a period of months will help. Many students are inclined to take more breaths than are needed, often at the expense of the musical line. It is recommended that the breathing habits of students who have difficulty in extended legato playing be carefully observed.

Technical Facility

Intermediate level oboe students should be able to play all major scales and arpeggios in all forms of articulation over the range of the instrument. Minor scales should be studied as well. In addition, the students should be acquainted with many of the alternate fingerings on the oboe and some of the special trill fingerings.

Preferred Third Octave Fingerings

All use both thumb octave key and half-hole

Intonation

Developing good intonation is a very important area of concentration at this level of learning. Students should gain the ability to hear pitch errors, know how to correct them, and begin to anticipate those which are consistent or chronic. They should be familiar enough with their own instruments to be able to compensate for possible built-in pitch inaccuracies. A good deal of duet playing is helpful at this stage in developing a sense of relative intonation with other players. In any

case, students should be encouraged to concentrate on centering the pitch of each tone they play.

Expression

At the intermediate level, students should learn some of the tools of interpretive expression. They should begin to play musical phrases more cohesively, demonstrating an awareness of the shape of each phrase and the function of its component musical tones within the whole. In addition, their ability to use dynamics as an expressive device should grow, and with it a concurrent realization of the need for vibrato in helping to make the tone *sing*. Vibrato is most effective when it can function as an integral part of a flowing and continuous column of air stimulated by spontaneous, yet regulated activity from the diaphragm.

More specifically, a satisfactory vibrato in oboe playing results from an alternating increase and decrease in the velocity of the airstream, which causes a corresponding rise and fall in pitch and volume. This is accomplished by changing the amount of diaphragm support in a rhythmical manner, while keeping all of the other factors (embouchure, throat, hands, etc.) constant. The only deviation in pitch and volume should result from alternating changes in the support of the diaphragm. Students should duplicate the characteristics of Diagram A, gradually increasing speed until the vibrato begins to become quasi-automatic and natural in sound, as indicated in Diagram B. If the vibrato seems erratic or artificial (as in Diagram C), it is well to have the students practice more slowly until the muscles of the diaphragm become conditioned to this sort of activity.

DIAGRAM A

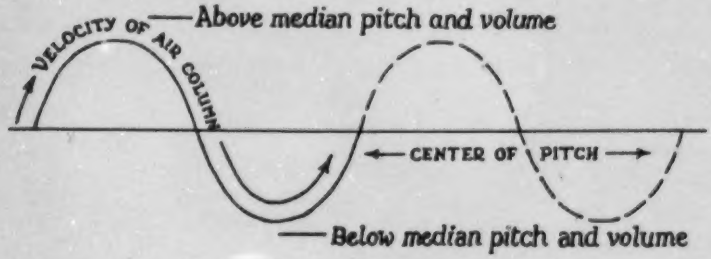
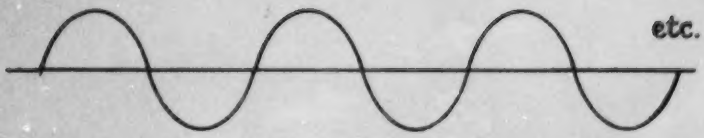
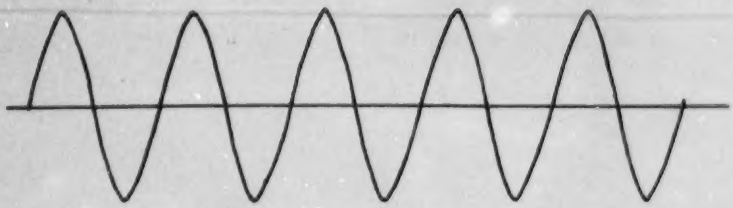


DIAGRAM B

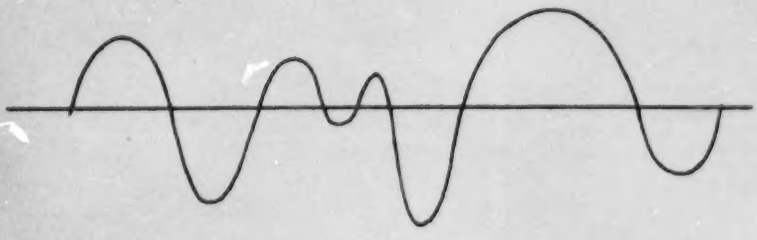


flowing, balanced pulsating effect

DIAGRAM C

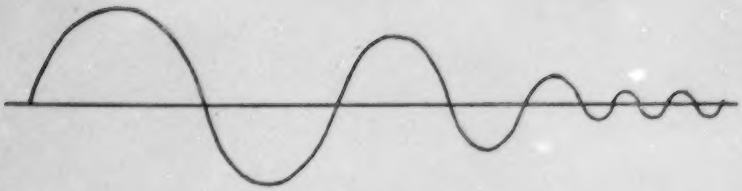


accented "machine-gun" effect



uneven effect

51



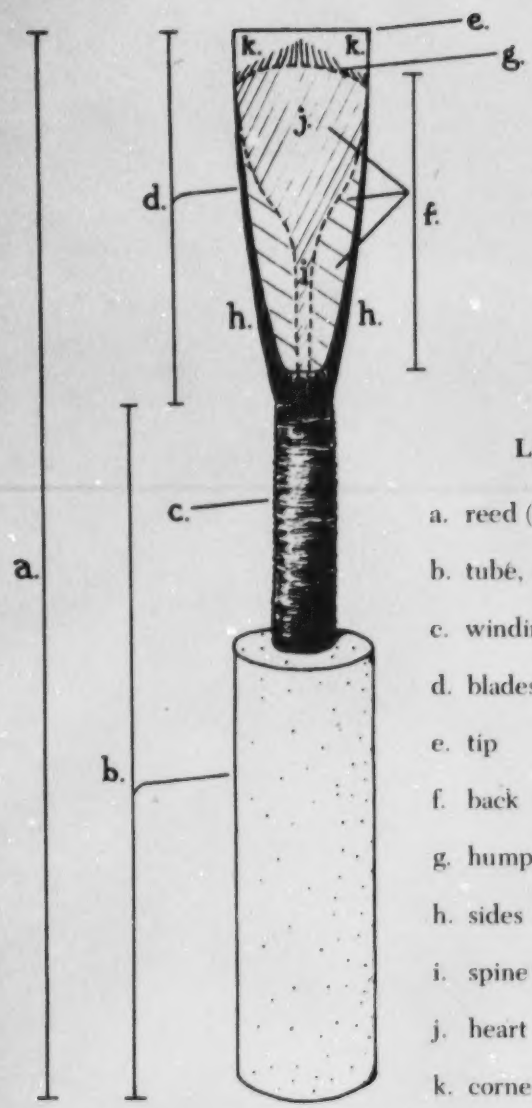
tremolo effect

Music Reading

The students' ability to read music, especially at sight, should improve considerably at the intermediate level. It is important that they see the notes in large groups, and begin to identify patterns and idiomatic passages. It is also important that they form the habit of reading ahead while holding notes of longer value. Studying complex rhythmic patterns can be helpful in improving the execution of common rhythmic figures that are easily misread. More careful attention should be given to staccato and legato playing. Efficient tonguing is an obvious prerequisite for fluent articulation, which requires complete control over all note lengths at all speeds. Sloppy passages can be greatly improved by practicing the notes at varying speeds for maximum and minimum lengths of time; and if the slurs are awkward, they should be drilled in various, repeated rhythmic patterns until they become consistently smooth and even.

The Oboe Reed

At some time during the intermediate level of instruction, students should begin to make their own reeds. Since the process requires a high degree of manual dexterity, the teacher should be fairly confident that the students will be able to make good use of both time and equipment before engaging them in the highly skilled practice of reedmaking. The following diagram should prove useful in identifying the various parts of the reed. A reedmaking manual is advisable—unless the students can receive direct instruction from a professional oboist. In any case, they should be expected to make the simpler reed adjustments described on pp. 30–32.



LEGEND

a. reed (approx. 70 mm.)

b. tubé, or staple

c. winding

d. blades (total cane area)

e. tip

f. back

g. hump

h. sides

i. spine

j. heart

k. corners

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Musicianship

As the base of their listening experience grows, students should become familiar with a variety of musical forms and styles. They should also develop an understanding of elementary music theory; relate it to their instrumental playing and begin to speak the language of musicians as they learn to read and use notation, terminology, and symbols.

In addition to the structured study provided by method materials, intermediate level students should begin to acquire some knowledge of the repertoire of important oboe literature. If solo music is a regular part of the learning program, they will probably have played a good deal of the less difficult music by this time and will have had some valuable experience in playing with piano accompaniment. The students should now become familiar with as many types of ensemble literature as possible, through playing as well as listening. Duet and woodwind quintet work is especially helpful as a supplement to regular playing in band and orchestra—and it is advisable for students to memorize a solo or a part of the lesson from time to time, in preparation for performances which are given from memory.

At the intermediate level, it is likely that enthusiastic students will have begun to think of themselves, with some degree of pride, as oboists. They will be looking for opportunities to play their instruments beyond the regular routine, and should be encouraged to do so. Their musical experiences to date should have aroused a genuine curiosity about the world of music, preparing the foundation for the development of inquisitive, resourceful *musicians*. They will soon become aware of the soloistic nature of the oboe, not only in terms of the literature, but also with regard to its unique role in the orchestra. Ideally, their sense of musical discrimination will have begun to produce a perfectionism—an insistence that every musical passage be as totally satisfying as they can make it, both for listening and for playing. The desire for excellence will manifest itself in activities such as reedmaking, which require great patience and perseverance, and will ultimately become the chief motivating force for personal progress. If students want to study the oboe privately, and can afford the lessons, they should be urged to do so.

Contact with other oboe players is also an important means of stimulation at this stage. Healthy competition among students can provide motivational benefits and a valuable oppor-

tunity to observe each other's playing habits and styles. Unless they take private lessons, student oboists will probably have little if any contact with professional performers. The teacher should therefore arrange to have them meet, talk, and even *work* with fine oboists as well as attend live performances of solo, orchestra, and chamber music. Such experiences are not only highly motivational, but they can also provide the students with a point of reference for their instrumental goals and enable them to increase their musical discrimination.

As they mature, serious oboe students will begin to realize that they are responsible for their own musical progress, and with this realization will come a growing awareness of the need for self-discipline.

ADVANCED LEVEL

At all levels of instruction, but particularly at the advanced level, it is important to remember that individual skills are functional components of total musical ability, *not* ends in themselves. For this reason, it is advisable to group the specific elements of beginning and intermediate level work into broad categories of musical, technical, and practical skill development, and then extend these areas of study into advanced levels, according to each player's needs.

Advanced level students should continue to expand and refine their musical skills, especially in terms of interpretation, tonal concept, intonation, and overall control. They should recognize many of the periods and styles exemplified in the repertoire and be conscious of the composer's intent and the interpretive requirements of the music they are playing. They should have consistent control over dynamics in all registers and spend a good deal of time working on nuance, vibrato, and levels of intensity. By this time, their experiences with the oboe have probably been sufficient to lead to a well-developed concept of tone production and quality that will ultimately produce a beautiful and expressive sound capable of making a dynamic statement of a musical idea, as required. In most students, discrimination for intonation improves gradually; but advanced oboists will generally be in tune with themselves and with the other players in ensemble if they remember to listen at all times and adjust when necessary.

Orchestral repertoire is an appropriate addition to solo and etude work at this level. With practice, advanced oboe students should be able to execute with accuracy most of the standard solo and orchestral literature. They should also be able to play all major and minor scales over the range of the oboe in various articulated sixteenth-note patterns at a metronome setting of 120. If they demonstrate a deficiency in such areas as rhythmic recognition, tonguing, or articulation, they should be given remedial work to correct the problem. Some students exhibit a weakness in sight-reading and should regularly be asked to read a great deal of unfamiliar music at a level of difficulty which does not require practice for correct execution. In most cases, the students have not learned to read ahead. Once they have developed the habit of looking several notes beyond the place where they are playing, they will make fewer and fewer mistakes in reading and more difficult music can then be introduced.

The areas of practical concern for advanced oboists are reedmaking and instrument adjustment. By this time, they should have acquired enough information from experience and have developed enough manual skill to be able to make usable reeds most of the time. Few oboists, professional or otherwise, are always satisfied with their reeds. Students are not an exception; but they should be encouraged to persist in their efforts to produce the elusive "good reed." Professional help is invaluable in this area.

With regard to the instrument, it may be necessary to make minor mechanical adjustments at periodic intervals, or on occasions when a qualified repairman is not available. Advanced students should understand the numerous, but simple adjustments on their instruments, and be able to diagnose adjustment problems. Because of the troublesome nature of some oboes, emergencies can occur at inopportune times and advanced level students should be expected to handle such situations adequately.

They should also possess a clear understanding of the continued importance of fundamentals to oboe playing at all levels, and spend a good deal of time practicing basic exercises—both technical and tonal. Their growing storehouse of information should encourage experimentation in all significant areas of playing and in reedmaking. It should also prove useful in working with beginning students, a responsibility that will help advanced level students to clarify their own understanding of what they are doing and why.

Student oboists should participate in as many diverse musical activities as their time and interest will permit. Solo playing in public is strongly recommended; and participation in mixed wind and string chamber music is also desirable, as it helps to develop musical perspective and versatility. In addition, advanced students should expand their knowledge of oboe literature of all types and styles by building on earlier listening experiences, with some emphasis on contemporary music.

At this level of learning, student oboists will be motivated primarily by a desire for excellence and by their own achievements—particularly those which have been recognized and/or rewarded by people who are important to them. Their sense of musical discrimination will have become increasingly refined and should have led to the formation of specific musical tastes. They will have become acquainted with other oboists, both student and professional, which should further motivate their own activity. Finally, they should have begun to establish specific goals in the direction of an actively musical life, perhaps as oboists.

Whether or not the students ever become professional performers, their experiences with the oboe should enable them to enjoy the instrument, to appreciate its potential for musical expression and communication, and to derive a sense of personal satisfaction and fulfillment from their musical accomplishments in playing it.

IV. Selected Resource Materials

BOOKS AND PAMPHLETS

Bate, Philip. *The oboe: an outline of its history, development and construction;* 2d rev. ed. St. Clair Shores, Michigan: Scholarly Press, 1962.

An authoritative, comprehensive reference to the oboe family.

Best, Arthur. *The oboe and English horn.* Available from the Conn Corporation, 1101 East Beardsley Street, Elkhart, Indiana 46514.

Contains suggestions for making and caring for reeds, selected solos and methods, and a fingering chart.

Lehman, Paul. *Teacher's guide to the oboe.* Elkhart, Indiana: H. & A. Selmer, Inc., 1965. Available from Derby Music Service, 5143 Busch Boulevard, Tampa, Florida 33617.

A concise booklet designed for the instrumental music teacher who is not an oboe specialist. Includes many valuable ideas and suggestions.

Moore, E. C. *The oboe and its daily routine.* Kenosha, Wisconsin: Leblanc Publications, Inc., 1962.

Rothwell, Evelyn. *Oboe technique;* 2d ed. New York: Oxford University Press, 1968. Order from Oxford University Press, Inc., 1600 Pollitt Drive, Fair Lawn, New Jersey 07410.

A comprehensive volume oriented to all aspects of technique. Includes an extensive listing of music for oboe and English horn.

Sprenkle, Robert & David Ledet. *The art of oboe playing.* Evanston, Illinois: Summy-Birchard Company, 1961.

A thorough guide to oboe playing and teaching, with a fully illustrated section on making and adjusting reeds.

Stanton, Robert. *Oboe player's encyclopedia.* Oneonta, New York: Swift-Dorr Publications, n. d.

Contains valuable lists of solos, recordings, double-reed suppliers, and oboe repairmen.

METHODS

Andraud, Albert. *Vade-mecum of the oboist.* San Antonio, Texas: Southern Music Publishing Company, 1940.

A voluminous collection of advanced level technical and orchestral studies (185) for oboe and English horn.

Capelle, Ferdinand. *Twenty grand etudes.* Paris, France: Alphonse Leduc, 1943. 2 vols. Available from M. Baron Company, P.O. Box 149, Oyster Bay, New York 11771.

Advanced studies after the violin works of Rode, Fiorello, and others.

Ferling, W. *48 etudes, op. 31.* San Antonio, Texas: Southern Music Publishing Company, 1926.

A good basic study book for students at early stages of the advanced level. Includes well-known etudes in all keys, and selections from both lyrical and technical works.

Gekeler, Kenneth. *Gekeler method for oboe.* Melville, New York: Belwin-Mills Publishing Corporation, 1940. 2 vols.

An excellent beginning-through-intermediate level progressive course. Logical, well presented, interesting, and well timed.

———. *Practical studies for oboe.* Melville, New York: Belwin-Mills Publishing Corporation, 1948. 2 vols.
Ideal supplementary material for the *Gekeler Method for Oboe* described above. Includes mostly technical studies.

Hovey, N. W. *Rubank elementary method: oboe.* 1934. Available from Rubank, Inc., 16215 NW. 15th Avenue, Miami, Florida 33169.

Labate, Bruno. *Etudes and scales for advanced oboists.* New York: Carl Fischer, Inc., 1937.

———. *Theodor Niemann method for the oboe.* New York: Carl Fischer, Inc., 1927.
An old, but widely used method for students at early stages of the intermediate level. Includes a number of easy duets and some orchestral excerpts.

Lamotte, Antony. *Eighteen etudes for oboe.* Paris, France: Editions Billaudot, 1905. Available from Theodore Presser Company, Presser Place, Bryn Mawr, Pennsylvania 19010.
Advanced studies adapted from the violin etudes of Mazas, Kreutzer, Rode, and others.

Luft, J. H. *Twenty-four studies for oboe.* Paris, France: Editions Billaudot, 1926. Available from Theodore Presser Company, Presser Place, Bryn Mawr, Pennsylvania 19010.
Excellent advanced etudes, mostly technical.

Prestini, G. *A selection of studies.* London, England: G. Ricordi and Company, 1944. Available from Belwin-Mills Publishing Corporation, 25 Deshon Drive, Melville, New York 11746.
An excellent technical study book for students at intermediate-to-advanced levels. Extremely thorough and challenging.

Salviani, C. *Studies for oboe*; vol. 4. London, England: G. Ricordi and Company, 1953. Available from Belwin-Mills Publishing Corporation, 25 Deshon Drive, Melville, New York 11746.
Supplementary technical studies designed for students at intermediate-to-advanced levels. Interesting and enjoyable to play.

Skornicka, J. E. *Rubank intermediate method: oboe.* 1939. Available from Rubank, Inc., 16215 NW. 15th Avenue, Miami, Florida 33169.
A sequel to the *Rubank Elementary Method: Oboe* by N. W. Hovey listed above.

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Voxman, Himie & William Gower. *Rubank advanced method: oboe*; vol. 1. 1940. Available from Rubank, Inc., 16215 NW. 15th Avenue, Miami, Florida 33169.

Part of the Rubank method book series (see also *Rubank Elementary Method: Oboe* by N. W. Hovey and *Rubank Intermediate Method: Oboe* by J. E. Skornicka).

SPECIFIC SUPPLEMENTARY MATERIALS

Gillet, Ferdinand. *Exercises of the scales, the intervals, and the staccato.* Paris, France: Alphonse Leduc, 1930. Available from M. Baron Company, P.O. Box 149, Oyster Bay, New York 11771.

Marx, Josef. *The methodical study of the oboe*, vol. 1: "basic scale and arpeggio studies." New York: McGinnis and Marx, 1963. Available from Pietro Derio Music Publications, 133 7th Avenue South, New York, New York 10014.

———. *The methodical study of the oboe*, vol. 2: "twenty-four melodic studies, opus 65." New York: McGinnis and Marx, 1963. Available from Pietro Derio Music Publications, 133 7th Avenue South, New York, New York 10014.

Excellent melodic studies by Verroust. Appropriate for students at beginning-to-intermediate levels.

Rothwell, Evelyn. *A book of scales for the oboe.* New York: Oxford University Press, 1953. Order from Oxford University Press, Inc., 1600 Pollitt Drive, Fair Lawn, New Jersey 07410.

Tustin, Whitney. *Technical studies.* New York: Peer International Corporation, 1955. Available from Southern Music Publishing Company, P.O. Box 329, San Antonio, Texas 78206.

An extensive volume of progressively difficult material designed for students at intermediate-to-advanced levels. Arranged in six sections: Scales, Intervals, Arpeggios, Trills, Tonguing Exercises, and Exercises for Fingering Technique.

DUET COLLECTIONS

Flemming, Fritz. *60 progressive etudes for oboe.* New York: C. F. Peters Corporation, 1929. 3 vols.

All in duet form. Designed for intermediate-to-advanced level students.

Salviani, C. *Studies for oboe*; vols. 1–3. London, England: G. Ricordi and Company, 1951. Available from Belwin-Mills Publishing Corporation, 25 Deshon Drive, Melville, New York 11746.

Delightful beginning-to-intermediate level duets.

Sellner, Joseph. *Twelve duos for two oboes.* Paris, France: Editions Billaudot, 1934. 4 vols. Available from Theodore Presser Company, Presser Place, Bryn Mawr, Pennsylvania 19010.

Advanced level material.

Telemann, G. P. *Six sonatas.* Wolfenbuttel, Germany: Karl Heinrich Moseler, 1949.

The famous flute duets, which are also very practical for oboes. Intermediate-to-advanced levels of difficulty.

ORCHESTRAL STUDIES

Andraud, Albert. *Vade-mecum of the oboist.* San Antonio, Texas: Southern Music Publishing Company, 1940.

A voluminous collection of advanced level etudes (technical), and orchestral excerpts.

Heinze, W. *Bach studies for oboe.* New York: Associated Music Publishers, Inc., n. d. 2 vols.

————. *Orchestral studies.* New York: Associated Music Publishers, Inc., n. d. 2 vols.

Rothwell, Evelyn. *Difficult passages for oboe and cor anglais.* Oceanside, New York: Boosey and Hawkes, Inc., 1953. 3 vols.

A fine, well-organized selection of excerpts.

————. *J. S. Bach: difficult passages.* Oceanside, New York: Boosey and Hawkes, Inc., 1955.

Valuable supplementary material for intermediate learning levels.

Strauss, Richard. *Orchestral studies.* New York: C. F. Peters Corporation, 1938. 2 vols.

Excerpts for three oboes and an English horn—from the works of Richard Strauss.

FILMS AND FILMSTRIPS

Oboe and bassoon care. (filmstrip). Encyclopaedia Britannica Educational Corporation, 425 North Michigan Avenue, Chicago, Illinois 60611. 1966. 46 frames. sound. color. 35 mm. (filmstrip series no. 11020, band instrument care).

Developed by teachers for teachers and students, each step is clearly illustrated by vivid closeups.

RECORDINGS*

Art of the oboe. Coronet ST 1717. Marcel Tabuteau, oboist/lecturer. 2-record set.

Mr. Tabuteau discusses the oboe and demonstrates his artistry in playing it. Royalties from this set go into a scholarship fund for young oboe students.

Jerry Sirucek plays oboe. Coronet S 1510.

Marcel Tabuteau, oboist. Columbia ML 4629.

Features Handel's *Concerto No. 3 in G minor for Oboe and Strings*.

Mozart. *Oboe Concerto*. Columbia. K. 314. J. DeLancie, oboist.

————. *Quartet*. Orion 7281. Oboe and strings. Ray Still, oboist.

Oboe recital. Crest RE 7027. Arno Mariotti, oboist. (Golden Crest recital series).

————. Crest RE 7022. Patricia Stenberg, oboist. (Golden Crest recital series).

Recital music for the oboe. Mark Educational Recordings, Inc., 4249 Cameron Road, Buffalo, New York 14221. Donald Jaeger, oboist.

Wayne Rapier plays oboe. Coronet S 1409.

*The following list is representative, rather than complete. For a more extensive reference, consult the instrumental music section of such catalogs as the *Schwann Artist Issue*, published by W. Schwann, Inc., 137 Newbury Street, Boston, Massachusetts 02116.

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THE CLARINET

I. Introduction

HISTORICAL BACKGROUND

The modern clarinet stems from a 17th-century cylindrical pipe with a single-reed mouthpiece and no keys. It was called a *chalumeau*. Modified in the early 1700's by the addition of keys, the instrument ultimately became known as a clarinet because the strident, brassy tones produced by its small reed resembled those of the *clarin trumpet*. The clarinet is still a single-reed instrument; but today's version:

- Is usually made of wood, although models made of metal and of other materials are also available.
- Comes in several models, some of which have as many as 21 keys and seven rings.
- Employs the principles of Theobald Boehm's system of fingering in most models.
- Produces full, rich tones over a range of more than three octaves.
- Is a leading instrument in bands and orchestras, and a popular choice for solo/ensemble work.

The regular members of the clarinet family, arranged from high to low in an alternating pattern of transpositions, include the E♭ soprano, which sounds a minor third higher than written; the B♭ soprano, which sounds a major second lower; the E♭ alto, which sounds a major sixth lower; the B♭ bass, which sounds a major ninth lower; and either the E♭ or the BB♭ contrabass, which sound one octave and a sixth lower and two octaves and a major second lower, respectively. These are played in concert bands and in clarinet choirs; but the B♭ soprano, the E♭ alto, and the B♭ bass tend to be most widely used. Because the standard model B♭ soprano with 17 keys and six rings is the usual choice for public school instrumental music programs, the material on the following pages will relate to this member of the clarinet family, unless otherwise specified. 63

SELECTION, CARE, AND REPAIR

The Instrument

Today's clarinets are usually made from grenadilla wood or synthetic materials, and they come in a variety of models and prices. In selecting an appropriate instrument, primary consideration should be given to accuracy of scale, tone quality, and response; but the following guidelines should also be observed:

- An instrument with a wooden body is recommended for intermediate-to-advanced students, but a plastic model is sufficient for beginners.
- A plastic model is recommended for use in marching bands, but a wooden instrument is preferred for concert performances.
- The joints should be tight and the pads firmly seated, for any leakage will cause difficulty with tone production.
- Although most clarinets need to be "favored" on certain notes, an instrument which requires radical adjustments of pitch should be avoided or the overall tone quality will be affected. In particular, the throat tones (g^1, $g\sharp^1$, a^1, and $b\flat^1$) should be clear and in tune with a minimum of embouchure adjustment. (If necessary, the pitch can be lowered by covering the tone holes with the fingers of the right hand, either singly or in combination.)
- The mechanism should be sensitive enough to allow quick action in fingering, but durable enough to prevent the keys from being bent.
- A supporting peg should be supplied with each alto, bass, and contrabass clarinet.

Once an appropriate instrument has been acquired, it should be kept in proper working condition. For example, the bore of the clarinet should be swabbed *from bell to barrel* after every playing, in order to remove accumulations of moisture. The mouthpiece should be washed frequently in *lukewarm* water, rather than swabbed. Wooden clarinets require special attention. Excessively dry conditions, sudden changes of temperature, and failure to warm a cold instrument *from the outside in* before it is played may cause the body to crack. Oiling the bore at periodic intervals helps to maintain the quality of the wood; but since students must be

careful to avoid getting oil on the pads, it is advisable to have them learn the process from the teacher, commercial literature, or a professional clarinetist.

Pamphlets describing the care of a clarinet are usually supplied with the instrument at the time of purchase, but they can also be obtained from clarinet manufacturers.

The Mouthpiece

Mouthpieces are available in a wide variety of types and styles. They are made from drilled rubber rod, molded rubber, plastic, or crystal (glass); and they vary in length, bore, tip opening, and facings. Different combinations of these characteristics produce different effects upon the instrument's tone quality and response. The least variable part of the mouthpiece is the tone chamber. Most manufacturers build the same size, shape, and type of chamber into all their models; and some professional clarinetists therefore advocate that all the players in a given organization buy their mouthpieces from the same company in order to stabilize both sound and intonation in group performances. Manufacturers often provide kits which enable the learner to experiment with a variety of mouthpieces, using several reeds on each, until s/he finds the one best suited to his/her particular embouchure and the bore of the instrument. In general, the standard model hard-rubber mouthpiece with a medium-sized tip opening and medium-length facings will probably be the most satisfactory, for it avoids extremes and is less liable to warp or break than similar models made from plastic or glass.

Free response and an unrestricted tone depend upon the degree to which the table of the mouthpiece (the part beneath the ligature where the reed lies) is smooth and flat. In order to avoid warping the reed or impeding its flexibility, the ligature should be fastened snugly—but without undue pressure. Fastening the ligature too tightly, or washing the mouthpiece in water that is *hot* rather than lukewarm, may cause the lay to warp. If this occurs, the mouthpiece should either be refaced by an expert, or replaced.

The Reed

Clarinet reeds are cut from natural cane and from a synthetic material called *fibercane*. For high quality performance on a B♭ soprano clarinet, cane reeds are vastly superior; but

those made from fibercane, with its "grain" of nylon threads, are quite appropriate for beginners' instruments and for larger members of the clarinet and saxophone families. Regardless of their composition, however, clarinet reeds should be purchased in sufficient quantities to permit selectivity and rotation. The following characteristics may be helpful in identifying good reeds:

- The cane should be a deep yellow in color, with flecks of brown in the bark of the stem (the uncut bottom of the reed). Light or greenish yellow indicates that the cane is either poor in quality or improperly aged.
- Small, darker grains should run parallel to the sides of the reed (not diagonally) all the way to the tip. Reeds with brown spots should be avoided.
- Reeds made from French cane in a "straight cut" are the best. They have a thickness in the heel of the cut section, an even taper to the tip, a ridge or peak running down the center of the cut portion and tapering off each side, and a decided resistance point beginning approximately ¼"–⅜" back from the tip.
- The reed should be *perfectly symmetrical* in shape and cut so that the entire reed will vibrate in controlled wavelengths, thus producing optimum tone quality and response.

Response is very important. To a large extent, how "hard" or "soft" a reed will play depends upon its strength or resistance to flexing—a quality that manufacturers identify with labels such as *soft*, *medium soft*, or *2*, *2½*, *3*, *3½*, etc. The ratings come from specific tests for stiffness which are conducted in the factory. In commercial testing, the reed is dry and such factors as weather, the age and/or quality of the cane or fibercane from which the reed is made, the type of mouthpiece with which it will be used, and the embouchure of the player are not considered pertinent. But each of these has a bearing on the reed's response; and for this reason, although the manufacturer's label is a valuable indicator of how "hard" or "soft" the reed is *likely* to play, the actual determination will be made by the clarinetist as s/he uses it on his/her own mouthpiece. Since a change in one or another of the conditions identified above may affect its response, a seemingly "poor" reed should be retested under different circumstances before a final decision is made. Another sound practice is to

"vacuum" the reed periodically with a strong suction of air, thus removing excess saliva which might cause a bubbling sound.

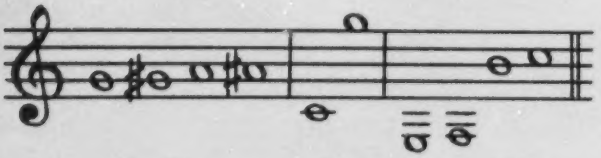
TUNING PROCEDURES

As indicated in the diagram below, a clarinet should be tuned:

(1) For throat tones (written g^1 to $a\sharp^1/b\flat^1$), by adjusting the *barrel* of the instrument;

(2) For c^1 and g^2 tones, by adjusting the *middle joint*; and

(3) For e-f and b^1-c^2 tones, by adjusting the *bell*.



(1) (2) (3)

In this way, the pitch is corrected at the point of optimal effect and the clarinet is kept in tune with itself. But the process should be done with sensitivity and care, or its purpose will be defeated. For example, if the joints are loosened as the instrument is tuned, both the tone quality and pitch adjustment will be adversely affected by a resulting leakage of air.

Intonation problems can also be caused by an inappropriate mouthpiece, mechanical deficiencies in the instrument, and/or inadequacies of the performer. A clarinet which is consistently sharp may need additional barrel rings or a longer barrel; but if the sound is flat, the condition may stem from a soft reed, too long a barrel, debris in the bore or in the tone holes, weak embouchure, or inadequate breath support. In most cases, however, the problem can be solved fairly easily with the help of a master clarinet teacher and/or a professional woodwind repairman.

II. Method Criteria

Instructional materials vary a great deal in terms of difficulty and rate of progression. In making a choice, it is important to consider the specific characteristics of the learner(s) and of the learning situation. Since most students have direct contact with their teachers only once a week, the materials they will be using should be clearly written and illustrated, well organized, and complete enough to enable them to progress as independently as possible through increasingly difficult and/or complex skills and understandings at a comfortable, yet challenging rate of speed. Self-teaching manuals usually have the qualities identified above, and they provide a step-by-step development of basic skills and concepts with continued reinforcement through a variety of musical examples.

In any case, an appropriate method book should include:

- Descriptions and diagrams of the various parts of the instrument, the mouthpiece, and reed placement;
- Pictures and simple explanations of such items as embouchure formation, the use of the tongue, hand positions, and fundamental techniques of breathing;
- A comprehensive and comprehensible fingering chart;
- Activities designed to increase the student's ability to read music, with particular attention to rhythms and beat and ample repetition for progressive reinforcement;
- Some interesting, but unfamiliar melodic material which will encourage the student to sightread rather than to learn by rote;
- Explanations of correct procedures for practicing, progress charts, and practice records.

Pace is a particularly important consideration in selecting method materials for very young learners. For example, if the instructional pattern brings them into the clarion register before their embouchure, hand positions, and tonguing techniques have been properly developed, physical problems may result; and unless the students are able to stretch their fingers far enough to cover the tone holes before being introduced to the upper register or register change (break), their experience with the clarinet may be a very discouraging one. On the other hand, students may lose interest in learning to play an instrument if the lessons progress too slowly.

In general, the plan of instruction should emphasize the rudiments of playing and musicianship, with continued stress on basic skills and concepts at all levels of difficulty; but the method and the substance of each lesson should have sufficient appeal for students to make practicing a pleasure. Textual material should therefore be supplemented with a variety of other resources, including books, suggestions from and working experience with professional clarinetists, and both solo and ensemble literature. It is well to remember, though, that a learner's progress is often less dependent upon instructional material and techniques than upon the stimulation received from the teacher's interest in him/her as a person

III. Teaching and Learning

BEGINNING LEVEL

Effective screening procedures for identifying potential clarinetists usually include a variety of indicators. Among them are the extent of the pupils' interest in playing a clarinet, work habits and general ability to learn, performance on preband instruments, teachers' appraisals, and scores on commercially or locally developed tests for musicality. Physical characteristics can also be important. Many teachers feel that students should begin to study the clarinet at a very early age; others believe that progress will be more rapid if the learner is physically mature; but most agree that—at the very least—students should have their adult front teeth, be able to cover the tone holes with their fingers, and have a long enough attention span to understand the lesson. This last characteristic suggests that the learner's maturation rate is another factor to be considered.

It is usually better for students with very small hands and fingers to wait until they have grown a little before trying to play a clarinet. In some cases, however, they might begin their lessons with a small E♭ soprano clarinet or a B♭ soprano plateau system clarinet (with covered holes). Conversely, students with very large hands and fingers may find that an alto or bass clarinet, or one of the other large members of the woodwind family, is more appropriate for them than the standard B♭ clarinet. Students who are double-jointed or whose hands have little strength may be *able* to play a clarinet, but may be happier and more successful with

another instrument. Physical irregularities in teeth, the angle of bite, or the structure of the jaw can also pose a problem, but an interested student can usually adjust to these with his/her embouchure. However, if the irregularity requires a corrective device, it is wise to have the student consult a doctor before beginning any study of the clarinet. Additional information can be found in *Orthodontics and Wind Instrument Performance*, an MENC publication described in the General **Resource Listing on p. 148.**

Finally, the learner may exhibit a weakness in one or more of the areas related to musicality; but this, in and of itself, need not be a deterrent to success in playing an instrument. For example, a student with good embouchure control and adequate breath support may learn to play quite well despite some difficulty in recognizing pitch—particularly if activities specifically designed to cope with the problem are included in the pattern of study. In short, since "circumstances alter cases," each prospective student should be evaluated as an individual, on a variety of significant characteristics.

Once they have been identified, beginning clarinetists should be placed in learning situations which are as appropriate for their needs as is possible within the local educational framework. In some schools, for example, lessons are given in classes which include a variety of instruments from the same musical family, but grouping students who are learning to play the same instrument is generally more effective. Heterogeneous grouping can provide stimulus, a wholesome competitive spirit, and a valuable opportunity for peer teaching—if the situation is artfully managed; but periodic shifting to maintain some degree of homogeneity may prevent slower starters from becoming discouraged and their quicker counterparts from losing interest. In any event, clarinet students should receive as much individualized attention as possible during their first year of instruction.

At this time, the students should become thoroughly familiar with the instrument—its parts, the operation of its parts, and its capabilities. They should form the habit of assembling it, playing it, taking it apart, cleaning it, and storing it *with care*. In addition, they should develop a greater degree of responsibility and self-discipline, proper study habits and practice procedures, increased auditory discrimination, and the ability to solve musical and technical problems related to playing the clarinet.

Major emphasis at the beginning level should be on forming correct habits, building a firm foundation of musical and related knowledge, and developing attitudes that will lead to success. Each of these elements should be reinforced at all levels of instruction; but the formation of proper habits is particularly important at the very beginning, for changes and improvements become increasingly difficult in later stages of development. A full-length mirror is a useful aid to good posture, position, embouchure, etc.; and rote learning tends to be the most effective mode for basic skill development *during the first few lessons*, because it eliminates the confusion that can result from concentration on note reading.

Embouchure

It is wise to have students begin with the mouthpiece alone, rather than the full instrument. Make sure that the reed and the ligature have been adjusted properly in each case, and then have each student:

- Draw the lower lip into a cushion over the lower front teeth, taking care not to allow too much lip to come in contact with the reed or its vibration will be impeded;
- Insert the mouthpiece almost vertically into the mouth and place it snugly against the upper teeth, approximately ¼"–½" from the tip; and
- Close the lips around the reed, keeping the corners of the mouth lifted a bit as though smiling.

Some students may need to drop the jaw a little and point the chin toward the floor in order to avoid bunching the muscles in the mouth area. These should seem to oppose each other—the lips *pushing toward* the reed and the jaw *pulling away*. If each step is performed exactly as directed, a concert c^3 pitch will be produced when the student blows into the mouthpiece.

Since proper intonation is largely dependent upon correct embouchure formation, it is important to remind beginners that the embouchure should be held in a *flexible*, but continually poised shape. The lips should be firm (without being rigid), for too much movement will result in exaggeration.

Articulation

An important, but highly controversial factor in achieving good articulation is the use of the tongue. Many students spoil their efforts by bringing too much of that muscle into play. Since the purpose of articulation is to stop the reed's vibration as efficiently as possible without inhibiting the airflow, only a very slight movement of the tongue is needed. Accordingly, students should learn to brush the underside of the reed near its tip with a light, delicate motion of the front part of the tongue and let the tongue itself "ride" on a continuous stream of air in movements that are free of tension. Exactly which part of the tongue should contact the reed has been the subject of some discussion. The most common approach is to touch the *tip* of the tongue to the upper portion of the reed. A master teacher or a professional clarinetist can be of great help in developing effective articulation; and some of the items identified in the Selected Resource Materials section at the end of this chapter may also be useful because they include both descriptions and diagrams.

In any case, however, students should develop a method of articulation that is adaptable to a number of musical styles. They should also be able to use the technique with other members of the clarinet family—although the larger instruments are played with more reed inside the mouth, which usually causes the tongue to articulate farther from the tip. In playing the larger clarinets, students must similarly tongue at the reed's tip; but because there can be no lessening of air support, any major movement of the tongue from the front of the mouth to the back should be avoided.

Summary

By the end of their first year of study, clarinet students should be able to play songs, etudes, scales by thirds, and arpeggios in the keys of C, F, and G, within a range of at least two octaves. Their performance should be acceptable in terms of tone quality and intonation, articulation, rudimentary phrasing, and the ability to play rhythm patterns at a steady tempo. (Beginning students are often tempted to rush through their exercises and move on to other things; but until they have developed a keen ear and the desire to "play it right," they might better work at slower tempos until they can perform each note of the scales, thirds, and arpeggios with even-

ness and conviction. Varying the material and the learning procedures connected with it will help to maintain interest. Finally, the budding clarinetists should have begun to develop a storehouse of musical knowledge relating to time, key signatures, note and rest values, musical terminology, and the idioms used in reading music at given levels of performance.

INTERMEDIATE LEVEL

Emphasis on basic skill development should continue at the intermediate level; but since the students will have made greater progress in some areas than in others, the learning program should be individually tailored to broaden areas of strength and cope with weaknesses. The students themselves should play an ever-increasing part in developing programs designed to meet their needs and characteristics.

Tone Quality and Intonation

Tone has a variety of component parts, among which are the following:

Shape or *outline* (e.g., a tone may be round, ribbon-shaped, threadlike, etc., according to the requirements of the music).

Body—the substance or "filling" of the shape which is usually achieved by projecting the airstream and voicing the tone as far forward in the oral cavity as possible.

Depth—the dimension of sound which results from playing easily through the clarinet.

Resonance—a clear, bell-like quality which can be demonstrated by playing a third space clarion C and letting the sound diminish to an echo with the total tone.

Mellowness—a warmth of tone which can be developed through practice with simple folksongs and chorales.

Richness—the term is self-explanatory.

Edge—a reediness which offsets or complements the mellow qualities of good tone. The proper cultivation of tonal edge will improve tone *production* in three ways. It will enable the player to (a) produce more and more sound almost effortlessly, without the common faults of stuffiness or overblowing; (b) stay on pitch, rather than playing sharp in softer passages and flat in louder ones; and (c) maintain a fairly even quality of tone, despite changes in dynamic level.

The main purpose of tonal development is to help students to:

- Produce the distinctive quality of the clarinet's sound, and
- Achieve a uniformity of tone throughout its entire range.

The process builds upon the basic skills developed during the first year of study: good posture, correct embouchure formation, a high level of auditory discrimination, efficient breathing patterns, and the ability to sustain a tone and to play reasonably long phrases. However, until the students understand precisely what good tone quality is, they can hardly be expected to produce it with any degree of consistency. In addition to such exercises as playing sustained tones at the same dynamic level from beginning to end, in decrescendos from forte to infinity, in crescendos from pianissimo to forte, and in combined crescendo/decrescendos, then, students at the intermediate level should be encouraged to form their own concepts of tonal quality by listening *carefully* and *repeatedly* to representative passages from masterworks and attempting to play them in the same manner. Some of the recordings listed at the end of this chapter and selections such as the following might be appropriate for this kind of activity: the second movement of Beethoven's *Second Symphony* (A major, Opus 92); the third movement of Rachmaninoff's *Symphony No. 2 in E minor* (Opus 27); the andante movement of Schubert's "unfinished" eighth symphony; the first movement of Tchaikovsky's *Symphony No. 6* (the "Pathetique"); and von Weber's overture to *Oberon*. Playing with and/or under the direction of professional performers can also be helpful.

Since tone quality is identified by the number and intensity of the overtones which accompany the fundamental, another useful experience is to have the students face into a corner a few feet away and listen for the overtones or partials in their own playing. Once they have become aware of the various tonal ingredients and begun to form a concept of good tone quality, they might work toward the achievement of the concept by playing slow, slurred scales, scales by thirds, arpeggios, and chromatic scales through all registers, while attempting to maintain a consistent quality of tone. This will require that they:

- Keep the oral and nasal cavities open (perhaps by "yawning" with the mouth closed);

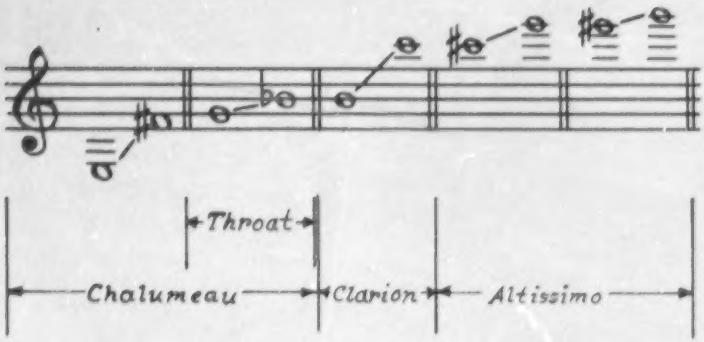
- Maintain a firm, but flexible embouchure that will enable the reed to vibrate freely up to maximum range and thus produce an easy increase in volume and intensity;
- Direct an airstream as far front in the oral cavity as possible;
- Experiment with pressure, voicing, and velocity until the desired effect is produced; and, in general,
- Play *through* the clarinet.

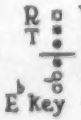
Fingering

Like everything else at the intermediate level, effective fingering techniques depend upon the development of correct habits and procedures in the earlier phases of study. One of the students' greatest problems in the beginning is a stiffness born of tension and the desire to "do it right." For example, they may tighten the muscles of the back and neck too much in an effort to stand or sit up straight. They may grip rather than *hold* the clarinet, and extend their fingers like sticks in order to cover the tone holes. Accordingly, they should be encouraged to let their arms *hang* from the hinges of their shoulders, a little away from the body on either side, as they stand or sit "tall." An imaginary line drawn from the elbows through the wrists to the knuckles at the base of the fingers should be nearly straight—the wrists neither bending toward the body nor away from it, yet remaining flexible. The right thumb, which supports the instrument, is a key factor. Holding it firmly, but not rigidly, with the thumb rest between the knuckle and the nail will do much to keep the right wrist flexible; and this, in turn, will benefit the left. It may also help to counteract a tendency among right-handed players to pull the instrument a little to the right. However, if the clarinet rests too high on the right thumb, the weight of the instrument will shift to the index finger and throw the right-hand position out of line.

Students can improve their fingering techniques by making sure that their fingers curve toward the instrument until the pads of their fingertips are ⅜"–⅝" above the keys and tone holes. The curve should be maintained at all times, with the finger action coming from the knuckles. The pads of the fingertips should fall on the keys and holes with quick, spontaneous strokes—as though released and retrieved by a spring

at the knuckle base—and the little finger of either hand should never be allowed to curl under the keys.

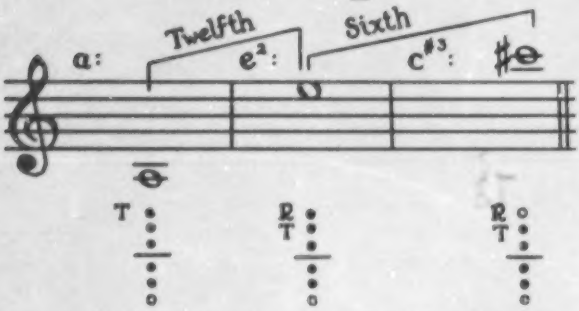
Registers of the Clarinet

Since the clarinet overblows the odd-numbered partials, there is a relationship among the fingerings of the registers which is based on the intervals of the twelfth and the sixth. The clarion fingerings are related to the chalumeau by the interval of the twelfth (e.g., the fingering for e, plus the register key, produces b^1; f plus the register key produces c^1; and f♯ plus the register key produces $c♯^1$). Some of the fingerings in the altissimo register are related to an interval of the sixth, with the addition of a vent provided by lifting the left index finger (e.g., the fingering for a, plus the register key, produces e^2; and e^2, with the left index finger lifted, produces $c♯^3$). For notes d^3 and higher, it is necessary to add the E♭ key (which is played with the little finger of the right hand). Lifting the left index finger and adding the register key to the

f♯ ^{2} chromatic forked fingering 

will produce d♯ ^{3}.

R = Register key T = Thumb

Example of Fingering Relationships



T = Thumb **R = Register key**

Students are often reluctant to use chromatic and alternate fingerings. The extent to which these techniques can improve a player's efficiency should therefore be demonstrated as early as possible; for the sooner the students begin to hear and feel their effects, the more receptive they will be toward using them. Practical application to solo and ensemble work should reinforce the habit once it has been formed.

Articulation

Articulation is composed of slurring and tonguing. The key factors are breath control and a careful coordination of tongue and finger action. Slurring and a smooth legato style require a continuous stream of air from tone to tone, coupled with controlled lip movement and coordinated finger action. Students might find it helpful to practice chromatic scales as though they were playing in slow motion. Once they have mastered the technique, they should incorporate it into other scales, arpeggios, etc., and then develop a staccato style of tonguing which includes maximal air support and avoids sympathetic responses of the lip, throat, and/or jaw muscles. Playing before a mirror may be useful in this respect.

Since excessive tongue action is a common fault in articulation, the students should be reminded that breath control is a major element in the process. The airstream initiates, connects, separates, and terminates the tones; the tongue serves as something of a valve for and complement to the breath. This is particularly important in tonal endings, where students should be encouraged to:

- Control the ending primarily with the *breath*, rather than the tongue; and
- Maintain embouchure, full diaphragmatic support, and a steady stream of air until *after* the moment of release.

It goes without saying that slurring and legato playing should be matched with a gentle "padded" touch, while staccato tonguing should be accompanied by a crisp, hammerstroke finger action.

The Upper Register

In order to achieve good tone quality and intonation in the upper register, players must increase their air support—but without tightening the lips, biting the reed, or overblowing. Students are often nervous about playing high notes and, for this reason, tend to relax their lips and stop blowing at the end of a low note in order to "prepare" for the seemingly difficult task of producing high ones. Other deterrents include:

- A mouthpiece that is defective, unsuited to the player's embouchure, or not well adapted to the instrument.
- Too soft a reed. If the sound produced by a student who generally plays quite well is thin and flat in the upper register, a stiffer reed may be needed.
- An insufficient quantity of reed in the player's mouth which "closes off" or restricts its vibration.
- Excessive pressure on the reed caused by "biting," a situation which can be corrected by pulling the chin downward until the corners of the mouth are drawn inward.
- Lack of controlled air support. Regular exercise in which the student inhales slowly and deeply and then exhales with increasing speed and force may help to build this support.

Given the proper reed and mouthpiece, students who place more of the reed in the mouth, who play the chalumeau tones *with the embouchure they expect to use for the upper register*, and who then move into that register without a conscious change in lip formation will find themselves producing the high notes both easily and well—for if they make the chalumeau tones as full as possible and continue to blow at a steady pace while gently pressing the register key, the sound will automatically shift to a rich, resonant tone a twelfth above

the note they have been playing. "The trick," writes woodwind specialist Keith Stein, "is to keep on blowing, once the key is touched, without flinching, shifting, or tightening up the lips."*

Style and Musicianship

Solos and other forms of clarinet literature should be an integral part of the learning program at the intermediate level—with continued attention to tempo, dynamics, style, articulation, and other aspects of artistic interpretation. Participating in small ensembles and large performing organizations can do much to broaden the students' insights and perceptions. Following the score of a musical performance while listening to a recording of it is an excellent supplement to playing experience, but students should have enough knowledge of the fundamentals to know what to listen *to* or *for*. If at all possible, then, the school music department should develop or provide direct access to a well-equipped resource center with books, periodicals, scores, tapes, discs, realia, and appropriate facilities for using them. But there is no substitute for day-to-day experience. Accordingly, the students should be encouraged to play their instruments as often as they can; to acquire a discipline through intelligent practice; to deepen their understanding of the elements of musical expression, and of the unique relationship between the composer and the performer; and ultimately, to develop a pride of musicianship whether their work with the clarinet becomes a vocational, or simply a recreational activity.

Reading

There is a relationship between how well students can read music and their ability to see, their attitude toward the process of reading, their knowledge of the units which comprise a passage to be read, their use and understanding of specific techniques for reading improvement, the nature and difficulty of the material, and of course, their experience. For this reason, it is wise to:

- Make certain that students can see well enough to read without strain. Help them to adjust the lighting and the

*The Art of Clarinet Playing (Evanston, Illinois: Summy-Birchard Company, 1958), p. 39.

position of their materials and, if necessary, provide access to simplified, enlarged, or otherwise appropriate reading material.

- Develop a positive attitude toward reading by having the students use music they will enjoy; teaching them to play a melody by rote, and then having them read it from a score; playing with them, if possible, and encouraging them to perform with their friends; and alternating simpler material with scores that present a challenge and still maintain a high level of interest.
- Have the students work with the basics of music until they can identify scales and chords at a glance and recognize chord and scale fragments in new and varied groupings.
- Encourage the students to *anticipate;* to read *clusters* of notes and predict the next; to look *ahead;* and to *skim* rather than examine the score, relaxing their gaze by occasionally glancing off the page at something else.

In the early stages of learning, students need a great deal of direct instruction and individual guidance; but as they move through 2 to 3 years of intermediate study, they should exhibit a growing independence and a higher level of responsibility, self-discipline, and initiative. The longer, more complex assignments that usually accompany increased proficiency will require them to make better use of their time. Mechanical problems should become less formidable, but repetitive practice will still be necessary if they are to solve the technical difficulties they may encounter in advanced clarinet literature. They should begin to listen carefully to their own performance—especially in ensemble playing, where such factors as balance and intonation are important—and be able to correct the deficiencies they hear. They should learn a great deal about music in general, and begin to concentrate on the esthetic qualities of performance. Gradually, as the students become increasingly *self*-directed, the teacher's role will shift from instructor to facilitator and guide.

Summary

By the end of the intermediate level, students should be able to play etudes, technical studies, solos, and literature of moderate difficulty in seven major keys and their relative

minors, within a range of three octaves (e-e^3). Their performance should demonstrate that they know what quality playing is, and that skill development has progressed to the point where they can habitually:

- Produce good tone quality and intonation;
- Articulate correctly in all styles and patterns;
- Play rhythmic patterns accurately and at a steady tempo; and
- Use alternate fingerings with evenness and smooth finger coordination.

Their playing should also reveal a growing musicianship, with increased attention to dynamics, phrasing, style, and all other aspects of quality performance.

ADVANCED LEVEL

Advanced level students should concentrate on perfecting those skills they already have, in addition to developing new ones; deepen as well as broaden their knowledge of music; and begin to exhibit the attitudes and behavior that characterize *a musician*. At this point, more specialized instruction may be needed than the instrumental music teacher can provide; but his/her indepth knowledge of the subject, coupled with an ability to assess learner needs, interests, and capabilities, should prove invaluable in guiding individual students to the help they need for the achievement of their personal aspirations.

Tone Quality and Intonation

In order to play with good tone quality and intonation, four conditions are necessary:

(1) The clarinet must be in excellent playing condition, and capable of producing an accurate scale and a resonant tone.

(2) The mouthpiece should be of reasonably high quality, and appropriate for the player.

(3) The reed should be made of high quality cane and properly adjusted.

(4) The player should have good posture, sufficient lung power, and excellent breath control.

For this reason, advanced level students should learn to

select, adjust, and refine their own reeds, and work toward the ability to sustain a tone at any dynamic level without a loss in either quality or pitch.

Reed Adjustment

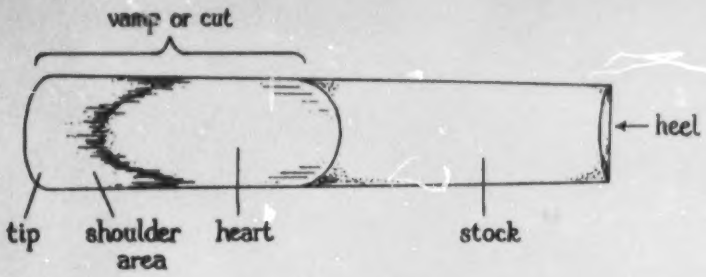
Even the best commercial reeds must be refined to the playing requirements of individual performers and the particular conditions of their playing. Students who are serious about performing will soon feel a need to experiment with reed adjustment. The topic is covered in detail in many texts (see Selected Resource Materials section at the end of this chapter), but the rule of thumb is still to proceed by trial and error, making only minute experimental adjustments and then testing them by playing.

Since reeds tend to become softer with use, it is advisable to buy one that has a slight stiffness. Some players condition a cane reed by wetting it with water, rubbing it down with a finger on a flat glass surface, and/or sanding it lightly with fine-textured garnet paper until the finish is smooth. This closes the pores in the cane and helps to resist decay from saliva. After the reed has been conditioned, the first few playings should be of short duration, with ample time between them to allow the cane to dry again completely on the glass surface and thus avoid "waterlogging."

If the reed has almost no resistance and produces faulty intonation and/or a thin tone quality, it should be clipped with a reed trimmer to expose a stiffer portion of the reed for playing. This should be done by wetting the reed first, trimming it by *hairline degrees*, and applying the playing test after each adjustment. Even a minute shortening of the tip makes a considerable difference in response. After the reed has been trimmed, it should be sanded lightly as before in order to even the forward edge.

On the other hand, if the reed produces blatant tones which require a great deal of air pressure, the tip should be thinned with the moist, flattened end of a stalk of Dutch rush (available in most music stores) or very fine sandpaper. Soaking the Dutch rush in water will make it soft, pliable, and easier to use. In some cases, it may be necessary to scrape the entire vamp, working carefully in light motions toward the tip while retaining the general contour of the reed. If the cut of the reed is out of balance, response will be stiff and the heavy side of the reed should be honed to match the other

side. Scraping the tip and shoulder areas should solve the problem; but it may be necessary to scrape the heart of the reed as well, and if so, the process should be done *very carefully*.



Reeds in need of adjustment can also cause squeaking. A clarinet may squeak if:

- The player's fingers aren't covering the tone holes;
- A part of the player's hand is resting on a key not meant to be depressed;
- The pads leak; or
- The reed is defective.

If the first three items don't apply and the player is successful on other reeds, then the fault lies with the reed being used. An asymmetrical cut of the vamp or a thick or uneven spot on the shoulder area or heart of the reed may cause it to squeak. The condition can be identified by holding the reed up to the light. Any spot that shows darker or thicker than the area around it should be smoothed away with Dutch rush or very fine sandpaper. The heart should be avoided, if possible, or approached very gingerly, because it is strongly affected by even small adjustments.

In any event, only good reeds should be selected for adjusting—and not all of these will adjust successfully.

Vibrato

The use of vibrato is not an established tradition in playing the clarinet, as it is in other woodwind instruments. A vibrato produced by jaw motion is acceptable for "pop" styles, and there are a few artist/teachers who recommend that it be used

judiciously as an expressive tool under special conditions in solo performance. In the latter instance, however, most players would find the sound of a diaphragm-originated vibrato more esthetic. The technique can be developed or adapted from the discussion of vibrato in oboe texts and methods. The larger members of the clarinet family are usually played with some vibrato when they are used as solo instruments or for solo passages.

Technical Facility

If students at the advanced level have acquired an evenness in finger technique and a knowledge of correct alternate fingerings and when to use them, they should strive for increased technical facility and make a habit of using correct alternate fingerings. Daily practice of scales, scales by thirds, broken chords, chromatics, etc., throughout the entire range of the instrument should increase their facility in all the major and minor keys and help them to develop a solid command of their instruments. Etudes, solos, and technical literature which the students find enjoyable, and which require daily work to master, are also valuable for this purpose.

Articulation

Advanced level students should improve both speed and ease of playing in all styles and patterns of articulation. The daily practice of scales, scales by thirds, broken chords, and chromatics recommended for increased technical facility is also useful in improving articulation. Since articulation primarily depends upon tongue and finger coordination, the styles and patterns should be practiced slowly until the tongue and fingers work together smoothly. A metronome can be useful for this purpose, if the speed is increased gradually, so long as good control is maintained.

Difficulties with articulation are not limited to tonguing problems; they also stem from incorrect embouchure, poor playing positions, a constricted throat, an improper mouthpiece, and other circumstances. When students encounter particular difficulty in articulation, music which meets their specific needs should be included in their daily practice material. In addition, they should study the technical aspects of the topic discussed in many excellent texts and method materials, and consult with professional clarinetists or clarinet teachers.

Range

Since the extreme high notes require both excellent embouchure development and breath control, work on extending the range to g^3 should be gradual. The procedures described for intermediate level students (see pp. 67–68) are also appropriate here, but overpractice on the extreme high notes should be avoided as it may have a deleterious effect on the quality of tone production in general. A few minutes of daily practice over a long period of time should be sufficient for the development of high-register playing.

Style, Musicianship, and Reading

Advanced level students should work toward continued improvement in their playing, a greater degree of sophistication, and a professionalism marked by the proper interpretation of musical nuances. Ensemble or organizational performances should broaden their discriminatory powers in listening; and they can improve their rate of musical reading through an abundance of solo, ensemble, and technical literature. In addition, they should be playing increasingly sophisticated material in all keys of the clarinet's tessitura. This should include solos, etudes, ensemble parts, and other forms that are both technically and interpretively demanding.

At the advanced level, the students' performance should demonstrate their ability to:

- Produce excellent tone quality and intonation;
- Shade and control the sound through all dynamic levels;
- Articulate correctly and with ease in all styles and patterns;
- Transpose at sight from piano scores in C, orchestral parts for clarinet in A, etc.; and
- Read intricate rhythm patterns at a steady tempo.

Finally, as maturing clarinetists, the students should demonstrate a growing sense of responsibility, self-discipline, and initiative; a deeper appreciation for music as an art form; a keener sensitivity to the different styles and types of music; more creative use of imagination in interpretation; and a greater sense of discrimination and analysis in solving musical problems.

IV. Selected Resource Materials

BOOKS AND PAMPHLETS

Bonade, Daniel. *The clarinetist's compendium, including method of staccato and art of adjusting reeds.* Kenosha, Wisconsin: Leblanc Publications, Inc., 1962.

Cailliet, Lucien. *The clarinet and clarinet choir.* Kenosha, Wisconsin: Leblanc Publications, Inc., 1962.

Cummings, Frank & Carl Gutmann. *Band instrument repair manual series I: clarinet.* Berkeley, California: Don Keller Music Company, 1953. Available from Wynn Music Company, P.O. Box 647, Orinda, California 94563.

Eby, W. M. *The clarinet and its care.* New York: Walter Jacobs Company, 1927. Available from Big Three Music Corporation, 1350 Avenue of the Americas, New York, New York 10019.

———. *The clarinet embouchure.* New York: Walter Jacobs Company, 1927.

Gates, Everett. *Odd meter etudes: for any treble instrument.* New York: Sam Fox Publishing Company, Inc., 1962.

Heim, N. M. *A handbook for clarinet performance.* Kenosha, Wisconsin: Leblanc Publications, Inc., 1965.

Houvenaghel, Charles. *Dramatic results of Leblanc research in clarinet acoustics.* Kenosha, Wisconsin: Leblanc Publications, Inc., n. d.

Explains how the reed, the ligature, the mouthpiece, and the physical characteristics of the performer tend to determine individual tonal characteristics.

Hovey, N. W. *Chart of regular and trill fingerings for the B flat clarinet.* Elkhart, Indiana: H. & A. Selmer, Inc., n. d. Available from Derby Music Service, 5143 Busch Boulevard, Tampa, Florida 33617.

Chart showing the proper selection and the basis of selection for trill fingerings on the B flat clarinet.

———. *Clinical studies for clarinets.* Elkhart, Indiana: H. & A. Selmer, Inc., n. d. Available from the Derby Music Service, 5143 Busch Boulevard, Tampa, Florida 33617.

Four pages dealing with tone production and intonation control for the B flat clarinet section.

———. *Major scales, arpeggios, and thirds for the clarinet.* Elkhart, Indiana: H. & A. Selmer, Inc., 1958.

Available from Derby Music Service, 5143 Busch Boulevard, Tampa, Florida 33617.

Four pages of major scales, arpeggios, scales by thirds, and chromatic scales with correct fingerings listed through all the keys. Useful in the development of technique in the intermediate and advanced stages of learning.

———. *Teacher's guide to the clarinet.* Elkhart, Indiana: H. & A. Selmer, Inc., 1967. Available from Derby Music Service, 5143 Busch Boulevard, Tampa, Florida 33617.

Pocketsize pamphlet for the clarinet teacher. Clear, concise explanations pertaining to the selection of equipment, reeds, and mouthpieces; the teaching of basic skills; and other vital aspects of clarinet playing.

Mazzeo, Rosario. *Clarinet manual.* Philadelphia: Henri Elkan Music Publishers, 1959.

McCathren, Donald. *Clarinet fingering chart.* Minneapolis, Minnesota: Schmitt, Hall and McCreary, n. d.

Besides a simplified approach to learning fingerings, the chart includes the application of these fingerings in context, and altissimo fingerings to C^4.

———. *Playing and teaching the clarinet family.* San Antonio, Texas: Southern Music Publishing Company, 1963.

———. *The selection and care of clarinet and saxophone mouthpieces.* Kenosha, Wisconsin: Leblanc Publications, Inc., n. d.

———. *Teaching techniques of the clarinet family.* Elkhart, Indiana: H. & A. Selmer, Inc., 1972. Available from Derby Music Service, 5143 Busch Boulevard, Tampa, Florida 33617.

Free booklet for educators which contains pertinent advice on all aspects of clarinet instruction.

Miller, J. R. *A spectrum analysis of clarinet tones.* Ann Arbor, Michigan: University Microfilms, 1956. Publication No. 19, 120.

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Lists texts, methods, solos, and ensembles. Material not graded by difficulty.

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Reed, Alfred. *The balanced clarinet choir.* Kenosha, Wisconsin: Leblanc Publications, Inc., 1958.

Rendall, F. G. *The clarinet: some notes upon its history and construction.* New York: Philosophical Library, Inc., 1957.

Riehm, Diethard, ed. *The clarinet—Oskar Kroll.* New York: Taplinger Publishing Company, 1968.

A thorough explanation of the evolution of the clarinet and its impact on composers from Gluck and Mozart to Bartok and Stravinsky. Also includes a bibliography of clarinet literature, from solos to large ensembles; a good discussion of other members of the clarinet family; and a novel section with short biographies of some eminent clarinetists, with photographs.

Seltzer, G. A. *A study of some technical problems for the clarinet family in orchestral literature.* Rochester, New York: University of Rochester Press, 1959. Microprint copy of original typescript.

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Plymouth Music Company, 1841 Broadway, New York, New York 10023.

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The artist/teacher provides corrective methods for solving the complex problems of clarinet-playing, including embouchure, articulation, intonation, fingering, reeds, and mouthpieces. Descriptive similes and illustrative charts serve to clarify the various techniques under discussion and make this text well adapted for use in high schools, colleges, and private studios.

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Willaman, Robert. *The clarinet and clarinet playing.* New York: Carl Fischer, Inc., 1949.

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Baerman, Carl & Gustave Langenus. *Clarinet method.* Books II-V. New York: Carl Fischer, Inc., n. d.

Bitsch, Marcel. *Twelve rhythmical studies for clarinet.* Paris: Alphonse Leduc, n. d. Available from M. Baron Company, P.O. Box 149, Oyster Bay, New York 11771.

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Bodegraven, Paul. *A clarinet method for grade schools.* New York: Carl Fischer, Inc., n. d.

Cavallini. *Thirty caprices for the clarinet.* New York: Carl Fischer, Inc., n. d.

Collis, James. *Modern course for the clarinet.* Books I and II. Philadelphia: Henri Elkan Music Publishers, n. d.

De Caprio. *Beginning method for clarinet.* Remick Music Corporation, n. d. Available from Warner Brothers—7 Arts Music Corporation, 619 West 54th Street, New York, New York 10019.

Adapts well to problems of very young students.

Gower-Voxman. *Beginning method for clarinet.* Kansas City, Missouri: Jenkins Music Company, n. d.

Hamelin. *Scales and chords.* Paris: Alphonse Leduc, n. d. Available from M. Baron Company, P.O. Box 149, Oyster Bay, New York 11771.

Hinze. *Orchesterstudien.* Vols. 1 & 2. Breitkopf and Hartel, n. d. Available from Associated Music Publishers, Inc., 866 3rd Avenue, New York, New York 10022.

JeanJean, P. *Etudes progressives et melodiques.* Paris: Alphonse Leduc, n. d. 3 vols. Available from M. Baron Company, P.O. Box 149, Oyster Bay, New York 11771.

For advanced clarinetists. Valuable for style.

———. *16 etudes modernes.* Paris: Alphonse Leduc, n. d. Available from M. Baron Company, P.O. Box 149, Oyster Bay, New York 11771.

Includes 20th-century harmonic idioms (whole-tone scale, augmented triads, etc.).

Klose, H. *Celebrated method for the clarinet.* Parts I and II. New York: Carl Fischer, Inc., n. d.

A musical and valid set of studies proven by time. Not sequential. The teacher should adapt the order of the exercises to fit individual student needs.

Labanchi. *Method for clarinet.* Part II. New York: G. Ricordi and Company or Carl Fischer, Inc., n. d.

Langenus, Gustave. *Book of scales.* New York: Carl Fischer, Inc., n. d.

———. *Clarinet cadenzas.* New York: Carl Fischer, Inc., n. d.

Selected from symphonic literature, solos, and chamber music. A handy supplement to the library of an advanced student.

———. *Complete method for the Boehm clarinet.* Parts I–III. New York: Carl Fischer, Inc., n. d.

———. *Practical transposition.* New York: Carl Fischer, Inc., n. d.

Lazarus. *Complete method for the clarinet.* Rev. by Langenus: Cundy-Bettoney. Rev. by Bellison: Carl Fischer, Inc.

Lester, Leon. *Melodious studies for clarinet solo.* Philadelphia: Henri Elkan Music Publishers, n. d.

Includes familiar melodies and tasteful musical etudes for intermediate students. Could be used as a supplement to Rubank's Voxman advanced methods.

LoPresti, Ronald. *20 melodic studies for clarinet.* Scottsdale, Arizona: Luverne Publications, n. d.

Highly recommended intermediate supplement. Combines well with Rubank's Voxman advanced methods, volumes 1 and 2.

Perier, Auguste. *Enseignement complet de la clarinette.* Paris: Alphonse Leduc, n. d. Available from M. Baron Company, P.O. Box 149, Oyster Bay, New York 11771.

———. *Le debutant clarinettiste.* Paris: Alphonse Leduc, n. d. Available from M. Baron Company, P.O. Box 149, Oyster Bay, New York 11771.

Excellent musical material for the intermediate student.

Phillips, Harry. *The clarinet class.* Evanston, Illinois: Summy-Birchard Company, n. d.

Polatschek. *Advanced studies for the clarinet.* New York: G. Schirmer, Inc., n. d.

Roberts. *Four-tone folios.* New York: Carl Fischer, Inc. 3 vols.

Rose, C. *40 studies.* New York: Carl Fischer, Inc. 2 vols.

———. *32 studies.* New York: Carl Fischer, Inc., n. d. Also included in the Cundy-Bettoney edition of H. Klose's *Celebrated Method for the Clarinet,* Part II.

Snavely, Jack. *Intermediate clarinet studies.* Delevan, New York: Kendor Music, Inc., n. d.

Spieler, Benjamin. *The student clarinetist.* Player Press. 3 vols.

Stubbins, William. *Applied basic theory for the clarinetist.*

———. *Essentials of technical dexterity.*

Contains the author's favorite personal exercises. Develops the complete range.

———. *Recital literature for the clarinet.* 5 vols.

The volumes contain 48 solos and 3 concertos, from easy to virtuoso difficulty.

———. *The study of the clarinet.* Ann Arbor, Michigan: George Wahr Publishing Company, n. d.

Method for beginners. Stresses chalumeau register until the student has developed the proper embouchure, hand position, and articulation.

Thurston. *Passage studies.* Oceanside, New York: Boosey and Hawkes, Inc., n. d. 3 vols.

Voxman, H. *Selected studies.* Miami, Florida: Rubank, Inc., n. d.

——————— & **W. Gower.** *Advanced method for clarinet.* Miami, Florida: Rubank, Inc., n. d. 2 vols.

Waln, George. *Beginning method for clarinet.* Melville, New York: Belwin-Mills Publishing Corporation, n. d.

FILMS AND FILMSTRIPS

Clarinet care. (filmstrip). Encyclopaedia Britannica Educational Corporation, 425 North Michigan Avenue, Chicago, Illinois 60611. 1966. 46 frames. sound. color. 35 mm. (filmstrip series no. 11020, band instrument care).

Developed by teachers for teachers and students, each step is clearly illustrated by vivid closeups.

RECORDINGS*

Capital University Clarinet Choir. David Hite, director. Coronet LP 1156.

This group encompasses the complete range of clarinets, from the contra BB flat to the soprano E flat.

Capital University Clarinet Choir. David Hite, director. Coronet S 1509.

This employs the same range of instrumentation as on Coronet LP 1156, but features still more variety of repertoire in this medium.

Capital University Clarinet Quartet. David Hite, director. Coronet S 1266.

Demonstrates the artistic possibilities of this relatively new chamber combination.

Clarinet contest music. Marbeck 2944. Available from H. & A. Selmer, Inc. Donald McGinnis, clarinet.

One side is performed on a student model instrument, the other on an artist model. The album was produced to help student clarinetists improve the tone, phrasing, and style of their performances through comparative study techniques or by playing with the record. The solos include all ranges of difficulty and have been graded II-VI by Mr. McGinnis.

Contest solos for the clarinet family. A Selmer Educational

*The list of instructional recordings is representative, rather than complete. For a more extensive collection, consult the instrumental music section of such catalogs as the *Schwann Artist Issue*, published by W. Schwann, Inc., 137 Newbury Street, Boston, Massachusetts 02116.

Recording. Donald E. McCathren, clarinet. Alfred Reed, contrabass clarinet.

Ten solos for E♭, B♭, E♭ alto, B♭ bass, and E♭ contrabass clarinets including *Five Dances for Five Clarinets*, by Alfred Reed. Scores of all these works, with piano and optional band or orchestra accompaniments, are available from Edward B. Marks Corporation. Included with each score is a master lesson plan by Dr. McCathren. These provide excellent incentive and study materials for high school students, and quality resource material for the teacher.

David L. Hite. clarinet solos. Volume IV. Coronet S 1723. Brahm's *Clarinet Sonata No. 1 in F minor* (Opus 120) and *Sonata No. 2 in E♭ Major* (Opus 120).

David L. Hite plays Class A medium difficult clarinet solos. Coronet LP 1142.

David L. Hite plays Class A medium difficult clarinet solos. Volume III. Coronet S 1604.

David L. Hite plays medium easy clarinet solos. Coronet LP 1243.

Donald McGinnis plays clarinet. Coronet LP 1705.

Donald McGinnis plays flute-clarinet duos. Coronet LP 1271.

Music for clarinet choir. State University College at Fredonia Clarinet Choir. William C. Willett, director. Stereo MES 22085. Mark Educational Recordings, Inc., 4249 Cameron Road, Buffalo, New York 14221.

Music from the greats: solos for clarinet and piano. (medium easy to medium difficult). Stereo MMG 35725. Mark Educational Recordings, Inc., 4249 Cameron Road, Buffalo, New York 14221. Paul Drushler, clarinet.

A record with a coordinated study guide designed to enrich intermediate level clarinetists' appreciation of music through reading, listening, and performing. Representative solos from many eras in music, beginning with Baroque. A worthy addition to the listening center of multimedia, music department, or individual home library.

Recital music for clarinet. Stereo MRS 32638. Mark Educational Recordings, Inc., 4249 Cameron Road, Buffalo, New York 14221. William C. Willett, clarinet.

Presents an artist/teacher playing standard clarinet repertoire suitable for high school students.

Robert McGinnis plays the clarinet. AAS 33-702.

Includes repertoire from lists of contest solos for festivals.

THE SAXOPHONE

I. Introduction

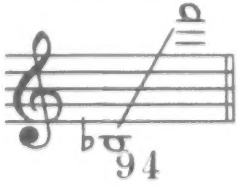
HISTORICAL BACKGROUND

The saxophone was invented by a Belgian instrument maker named Adolphe Sax (1814–94). Apparently intending to develop an instrument that would provide a tonal link between the clarinets and the tenor brasses in French military bands, he added a single-reed mouthpiece to a brass body with a conical bore and patented his invention in 1846. Its acceptance was immediate. The saxophone fared so well in a special competition that for a time it replaced the horn, the oboe, and the bassoon as instruments in French marching bands.

For concert work, however, the saxophone was simply "an extra wind" until it was legitimized as a solo and orchestral instrument by the standards of style and performance established by Marcel Mule's French school of saxophone playing. In the United States, conservatories and schools of music were reluctant to allow their students to major on the saxophone, and its popularity as a jazz instrument during the 1920's did little to improve its legitimacy. Since that time, the virtuoso potential of the saxophone in a variety of timbres, ranges, and techniques has been so well demonstrated that a number of major works have been written for it by such renowned composers as Glazunov, Haba, Hindemith, Ibert, von Koch, Larsson, Læeson, Martin, and, of course, Mule.

The saxophone functions acoustically as an open pipe, overblows an octave, and is capable of producing the complete overtone series. All members of the family in current use are transposing instruments with a relatively simple and logical fingering system that includes an articulated G♯ key, an automatic octave key, and side key rollers which are operated by the little fingers.

Music for the saxophone is notated on the treble clef in the written chromatic range defined below.



As early as 1842, however, Berlioz described the range of the instrument as three octaves from b♭. Contemporary teachers have supported this contention by using a flexible embouchure and throat, plus auxiliary fingerings and their combinations, to extend the upper range at least a fourth beyond the level shown above; and such composers as Henry Brant, Jacques Ibert, and Henry Cowell have included notes above written f^3 in their solo literature for saxophone.

From high to low in an alternating pattern of transpositions, the most frequently used members of the saxophone family are the soprano in B♭, which sounds a major second lower than written; the alto in E♭, which sounds a major sixth lower; the tenor in B♭, which sounds a major ninth lower; the baritone in E♭, which sounds an octave plus a major sixth lower; and the bass in B♭, which sounds two octaves plus a major second lower. The B♭ soprano and the B♭ bass are seldom found in schools—although the soprano, in particular, should be promoted because it enables students to use some of the moderately difficult literature that has been written or arranged for the popular saxophone quartet. There are two forms of this ensemble: the SATB and the AATB.

SELECTION, CARE, AND REPAIR

The Instrument

In choosing a saxophone, the following items should be considered:

- The cork on the neck should be intact.
- The instrument should have all keys between b♭ and f^3.
- The keys should not bend easily.
- The pads should be properly seated.
- The key action should be responsive and produce a minimum of noise.
- The instrument's quality is not necessarily related to its age.
- The determining factors should be accuracy of intonation and a pleasing tone.

The advice of professional performers can be very helpful in this matter and might preclude much difficulty at a later date.

Like all musical instruments, the saxophone requires proper maintenance for consistently good response. It should be enclosed in a case whenever it is not in use, the neck and mouthpiece wrapped separately in small cloths and snugly fitted into the accessories compartment. The surface of the neck and body should be wiped with a soft cloth after every playing. Periodically, a soft *damp* cloth should be used and the interior cleaned with a saxophone swab or something similar. The mouthpiece and neck need particular attention. They, too, should be wiped after every playing; but they should also be washed occasionally in lukewarm soapy water and then thoroughly rinsed and dried, in order to prevent accumulations of foreign matter that can seriously affect both tone and intonation.

Dusting under the keys and rods with an ordinary feather helps to keep the pads free of dust which, combined with the moisture that results from playing, sometimes causes them to stick to the tone holes. If a pad tends to stick, the condition can be remedied by placing a small piece of lens cleaner, thin cloth, or fine paper between the pad and the hole, closing the key with gentle pressure, and with the key held down, gently drawing the material back and forth. Pads that continue to stick even after periodic cleaning should be replaced. The G♯ key may cause trouble in this respect, partly because it is opened by spring tension rather than the pressure of a finger. For this reason, students should be advised to lift the G♯ plate before they begin to play in order to be sure that it hasn't sealed.

When required, a tiny drop of woodwind key oil should be *very carefully* applied with a toothpick to all friction points. Any excess should be wiped away immediately—and no oil should touch the pads, or they can be ruined. In general, students should be warned against a "do-it-yourself" approach to adjustments and repairs; but the following items can be useful in dealing with relatively minor problems:

- A small screwdriver,
- A pipe cleaner,
- A crochet needle (for replacing slipped springs),
- Cement, and
- Cork grease or vaseline (many players prefer the latter because they feel that its mineral base is less liable to decay the cork than the animal tallow of which the grease is made).

All major repairs should be referred to a qualified repairman; but even if there are no apparent difficulties, the instrument should be checked and readjusted once a year.

The Mouthpiece

The most critical factor in tone production on the saxophone is the mouthpiece, in combination with a good reed and ligature. Care in the selection of each of these will help prospective saxophonists to advance more readily.

Mouthpieces are made of hard rubber, plastic, glass, and metal. A good mouthpiece should have a tone chamber with a diameter larger than either of the openings into it. Those with straight side walls should be avoided, because such "clarinet-type" mouthpieces hinder tone production. Students should be advised to choose a high quality rubber or plastic mouthpiece, and to be careful not to damage the tip or facing by bumping or dropping it. In addition to providing a different type of sound, metal mouthpieces have an advantage for some tenor and baritone saxophone players who prefer smaller mouthpieces. The utilization of metal reduces the thickness of the walls, while preserving the strength of hard rubber and the same inner dimensions.

A mouthpiece with a medium facing and tone chamber will usually produce the best results for a beginning student. The term *facing* refers to the angle, length, and shape of the curve toward the tip and away from the mouthpiece table on which the flat heel of the reed rests. The tone chamber is the hollow portion of the mouthpiece, the dimensions of which affect the resonance and timbre of the sound produced. A medium facing and tone chamber provide an acoustical compromise that facilitates tone production in all ranges and dynamic levels, with maximum consistency of timbre and intonation. Most players agree that this is the best combination for producing characteristically pleasing saxophone tones. Extreme styles may delude students into thinking they are successful at the moment, but such styles can also cause severe embouchure tensions or compensations which could impede the students' progress for years afterward. For example, a facing that is too steep in combination with a reed that is too stiff might cause the player to develop an excessive bite and thus compound the problems related to embouchure.

While the value of an excellent mouthpiece should never be underestimated, proper use of the ligature is also impor-

tant in producing a full tone because it affects the vibration of the reed. The upper screw (toward the tip of the reed) should be tightened just enough to hold the reed in place without limiting its ability to vibrate. A plate fitted to the ligature below the tension screws or rails is also recommended in order to equalize the pressure of the screws and prevent the ligature from cutting into the edge of the reed.

The Reed

Good reeds are as important to a student's success as they are to a professional's; and for this reason, even a beginner's reeds should be selected with care. Again, the rule of thumb is moderation. Not all manufacturers have standardized labeling procedures, though many use the numbers *1*, *1½*, *2*, . . . *5* to designate the various degrees between *soft* and *hard*. But since these classifications are determined by measuring the strength of the tip when the reed is *dry*, there is a good deal of variation even among reeds that bear the same strength number.

Beginners should use reeds of medium strength in order to develop the sensitivity of a proper embouchure. (Too soft a reed usually results in too little breath support and an inconsistent lip position.) However, once proper embouchure and breathing habits have been firmly established, a stiffer reed should be used. Most reeds soften after a few playings, so that one which feels too stiff at first may respond well after it has been "broken in."

Students should be encouraged to experiment with a number of reeds, since only a few of them will be suitable for use. A good reed can usually be identified by the following characteristics:

- Seasoned cane. This should be deep yellow in color (not greenish or light yellow), with flecks of brown in the bark of the stem (the uncut bottom portion of the reed).
- Straight grain running parallel to the sides of the reed.
- Small, darker grains in even, lengthwise distribution to the tip of the reed. (Brown spots or areas should be avoided.)
- Symmetry of shape. (The shadows on either side of an imaginary median should be identical.)
- Even resistance to pressure lightly exerted by a

thumbnail at the corners and along the center of the reed tip. (The greater the resistance to flexing, the harder the reed.)

The back of the reed should be absolutely flat. Since cane will warp during the drying process if it is not carefully stored, the reed should be stripped of excess moisture after each playing and then fastened to a flat plate glass or commercial storage case. (The reed should never be stored while still on the mouthpiece, or the outline of the window will be imprinted on the back.) In assembling the reed and mouthpiece, the ligature should be loosened, the reed slid in butt-end first, and then the screws tightened. Placing the ligature *over* the reed could nick or otherwise damage the delicate reed tip.

TUNING PROCEDURES

The alto saxophone sounds a major sixth lower than written. When playing the written second line g^1, the alto saxophone will sound the b♭ concert below. By moving the mouthpiece in or out on the cork, the instrument can be tuned to that particular note. While centering the pitch, it is advisable to regulate the intonation by experimenting with various tones over the range of the instrument. Once the saxophone is in tune, it is a good policy to mark the location of the mouthpiece on the cork with a pencil. However, this location should not be allowed to remain static, or to substitute for critical listening and adjusting as necessitated by various playing conditions.

The tenor saxophone sounds a major ninth lower than written. By playing third space c^2, the tenor saxophone will sound the b♭ concert a ninth below, in unison with the second line g^1 of the alto. The baritone saxophone sounds an octave plus a major sixth lower than written. By playing g^2, the baritone sounds in unison with the alto and the tenor on b♭ concert. Tuning procedures on these instruments are identical to those described for the alto.

II. Method Criteria

A good teacher constantly reassesses both methods and materials in an effort to determine the most effective ways of helping students to learn. Since teaching and learning are

dynamic phenomena, it is strongly recommended that an eclectic approach be used and that the methods and materials be appropriate for:

(1) The objectives to be achieved—a working knowledge of the mechanics of the instrument, good sound production, critical listening, sensitive performance of quality musical selections, creative interpretation, and improvisation;

(2) The learning situation—class or one-on-one instruction, homogeneous or heterogeneous grouping of instruments, frequency and duration of the sessions, etc.; and

(3) The characteristics of the learner(s)—age, talent, potential, musical background and experience with musical instruments, initiative, and ability to learn.

Finally, the methods and materials should be musical in approach as well as content.

III. Teaching and Learning

BEGINNING LEVEL

Students can begin to study the saxophone when they are 9 or 10 years old, if:

- They are big enough to hold the instrument without discomfort; and
- Their hands are large enough to allow the fingers to operate the pearl plateaus while the left thumb is on the thumb plateau and the right thumbnail is below the thumb rest.

However, if the instrument is too heavy for a given student or his/her hands so small that they persist in touching the side keys and thus prevent the proper tones from sounding, another instrument might better be selected.

The single most important factor in playing a saxophone is the production of a good basic sound. Having students work on the mouthpiece alone, as a supplement to regular practice, is an excellent approach to the development of a full, rich tone because it allows them to concentrate on embouchure and breath support without the encumbrance of the whole instrument. Other useful aids include timing the tone; checking the fullness of the tone, support, and differences in pitch; and having students listen to professional performances.

The concept of good embouchure should be carefully explained so that students will understand the basic functions of the mouthpiece, reed, facial muscles, and teeth in the production of a tone. For example, they should learn that:

- The embouchure is the formation of the lips around the mouthpiece together with the teeth, cheeks, and jaw–*all* of which affect tone production.
- A major purpose of the embouchure is to provide a sealed connection which maintains the pressure of the airstream and transfers it to the mouthpiece.
- Under normal conditions, the embouchure is formed by allowing the upper teeth to rest gently on the top of the mouthpiece (see diagram), approximately ½" from the tip for the alto, ⅝" for the tenor, etc., while the corners of the mouth are drawn together around the mouthpiece/reed, as if saying the word *prune*.
- The lower lip should cushion the reed, but with so little pressure that the reed can vibrate freely.

Arrows indicate the proper position of the upper teeth and the lower lip, directly opposite each other.

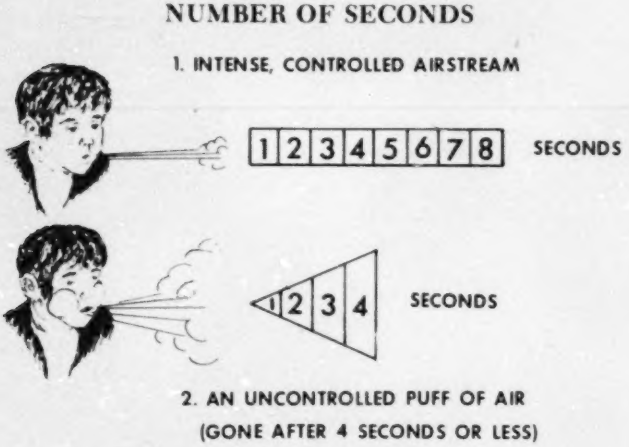
The embouchure should be firm enough to blow an "a" on an alto saxophone mouthpiece, a "g" on a tenor saxophone mouthpiece, or an "f" on a baritone saxophone mouthpiece right from the beginning—if the reed is a good one. (These are approximate pitches.) A reed that is too soft may close up when it is blown with sufficient airstream and proper embouchure.

The proper functioning of embouchure, reed, and mouthpiece in producing a rich saxophone sound requires a well supported, well controlled stream of air. Students may more readily understand the difference between a steady stream of air and an uncontrolled puff if they:

(1) Pretend that the instrument is a straw, and then

(2) Form the word *who* with their lips and BLOW.

The amount of air will be roughly the same in each case; but as the following diagram shows, the air is exhaled for a longer period of time in the first instance than in the second.


NUMBER OF SECONDS
1. INTENSE, CONTROLLED AIRSTREAM
1 2 3 4 5 6 7 8
SECONDS
1 2 3 4
SECONDS
2. AN UNCONTROLLED PUFF OF AIR
(GONE AFTER 4 SECONDS OR LESS)

In order to produce a full, rich tone, the airstream must be concentrated, steady, and intense—as in blowing through a straw.

Playing a saxophone requires quick but noiseless inhalation and extended exhalation. The rate is slower than in normal breathing, so students must learn to breathe deeply in order to maintain an adequate supply of air and sufficient oxygen in the bloodstream. Good posture is essential to the process because it allows the chest to expand to its full capacity. For this reason, students should develop the habit of standing and sitting erect, with the chest high. In addition, they should learn to:

- Prepare for inhalation by dropping the jaw, keeping the upper teeth anchored in order to preserve the embouchure, and opening the throat as though they were about to yawn;
- Begin breathing action from the floor of the chest cavity using the back, side, and abdominal muscles that surround the area;

- Stop and start the airflow without taking a new breath, by changing the size of the throat opening and the pressure in the chest cavity;
- Equalize the airstream by increasing support from the diaphragm;
- Extend exhalation while maintaining a steady, uniform pressure with the muscles of the chest and abdomen; and
- Play on a full breath, with the lungs sufficiently inflated to allow the natural elasticity of the muscles to work for them.

The following exercise might be useful in developing a proper concept of breath support:

Have the students stand with their backs against a wall, hands clasped behind the neck, and elbows back. Ask them to inhale in three stages:

(1) To the diaphragm,
(2) To the lower rib cage, and
(3) To the upper chest cavity,

thus filling the lungs completely while keeping the shoulders down and relaxed. Then have them form an embouchure and attempt to blow a long, intense stream of air as in the straw example above, keeping the throat open and relaxed.

The exercise should be repeated several times before it is applied to playing the saxophone. If it is done correctly, a solid, ringing tone will result.

Before the saxophone is played, its reed should be thoroughly wet in the mouth or in a glass of water and rubbed toward the tip to close the pores. The tip should be even and flat, never wavy. If necessary, it can be flattened by holding it against the table of the mouthpiece with the thumb. In placing the reed on the mouthpiece, care should be taken to insure that the side rails are in line with the flat table edges and that the tip, when depressed toward the mouthpiece, is aligned with the outer edge of the curved tip rail. This is very important in securing optimal efficiency in tone production.

The neck screw must be loosened before the neck is inserted into the body of the saxophone. It should never be forced into place while the screw is still tight, or the joint may eventually leak. Keeping the coupling lubricated is good preventive maintenance, as a leak here could act as an aux-

iliary octave key; but some friction is necessary, in order to hold the neck in the desired position.

In the beginning, the mouthpiece should be twisted into place on the greased cork until it reaches the spot marked by the instructor as best suited to the overall intonation of the instrument. This should help to improve the student's pitch consciousness. Later, as his/her embouchure is strengthened, the mark should be readjusted accordingly.

The saxophone should hang at a level which allows the student to blow it without stretching his/her neck. The strap should be comfortable, and easily raised or lowered. The saxophone should be held in front of the body (soprano), at the right side (tenor), by means of a sax stand (baritone and bass), or in whatever position (especially the alto) seems most appropriate for the size of the instrument and its relation to the player's arms and body. The chief criteria are comfort and stability—the former because it affects tone quality, intonation, technique, and interpretation; the latter because it affects the number of times the embouchure must be adjusted.

In proper fingering position, the left thumb should rest on the thumb plateau, while the first finger of the left hand is placed firmly on the B key and the other two fingers rest above the A and G keys. The little finger is not used at this stage. The first, second, and third fingers of the right hand should be placed over the F, E, and D keys, and the right thumb against the body of the instrument below the thumb rest.

Pitch is essential to the concept of good tone quality, even at the beginning stage. However, although single long tones are important at first, moving the fingers in slurred quarter-note patterns while playing sustained sounds can help in developing smooth technique and might also reduce the number of reading and coordination problems that so often arise later.

Articulation

The contact points of tongue-on-reed for saxophone articulation are determined by:

- The size of the mouthpiece;
- The amount of mouthpiece and reed taken into the mouth;
- The nearly horizontal position of the mouthpiece in the mouth; and

- The size and shape of the player's tongue in relation to the oral cavity.

A successful approach is to anchor the tip of the tongue behind the lower teeth or lip (not *on* or *under* the reed) and let it arch up to touch the tip of the reed lightly. A point somewhat back of the tongue tip actually contacts the reed—not stopping the airflow as commonly thought, but merely halting the vibration of the reed for the length of time required by the style of articulation that is being used. Even a student with a short tongue should be able to tongue freely, reed tip to tongue tip, without anchoring. The deciding factor is the resulting sound (e.g., the "slapping" effect of too much tongue-on-reed should be avoided). It is also important to make sure that no saliva is transferred from the tongue to the interior of the mouthpiece, and that no excess moisture is allowed to collect there. Finally, there must be a constant supply of air to the instrument throughout the process of articulation.

A tone can be stopped in any of the following ways:

- By touching the tip of the reed with the tongue;
- By allowing the beginning of a note to double as the release of the previous note, as in legato articulations;
- By abruptly halting the air supply; and
- By allowing the breath to die away as in diminuendos or phrase endings.

The choice is determined by the player, as s/he interprets the composer's directions in relation to the style of the music.

A detailed discussion of articulation techniques and the factors which affect them, complete with diagrams, can be found in *The Art of Saxophone Playing* by Larry Teal (see annotated reference in the Selected Resource Materials listing at the end of this chapter.)

Comprehension of Rhythmic and Melodic Notation

Rhythmic feeling, rather than intellectual knowledge, is most conducive to the successful development of the beginner. Finger-snapping, clapping, and foot-tapping to rhythms not unlike jazz are good techniques for creating a *feel* for music. In addition, the students might be asked to identify the rhythms of certain melodies as they *sense* them. When they begin to comprehend rhythms visually in notation, a metronome can be used to make them aware of the relation-

ship between rhythm and beats that divide time evenly. Playing articulated rhythm patterns can also be helpful, because it develops coordination in blowing, tonguing, fingering, and timing. Accurate reading and relaxed performance often result from this approach.

Asking students to play their own quarter-note melody patterns can do much to stimulate creativity and provide a natural introduction to key signatures and notation. If a student develops something unusual, it should be written on the chalkboard for all to see. In any case, the students' interest in discovering what they have created often motivates their learning how to write it. Terminology should be introduced as the need arises, but it is recommended that the teacher use *correct technical terminology* right from the beginning and insist that his/her students do the same.

Intonation

Often students neglect to use their sense of pitch discrimination to the fullest extent. They *see* the music as they play, at the expense of listening to it; and the teacher may therefore conclude that students have a "poor ear" when, in fact, they simply may not be using their abilities to the best advantage.

Two sounds of the same pitch may vary in clarity, quality, and timbre. For this reason, it can be very difficult to tune different instruments. Applying the principle of in-tune playing helps to increase an *aural* awareness of pitch differences. Using a strobotuner creates a *visual* awareness of them; but the strobotuner should be viewed as a training device, not as a crutch or "substitute ear." It is most valuable for:

(1) Tuning
Tune to A or B♭ *concert*. When the wheel has stabilized indicating that the tone is in tune, have the students experiment by blowing first easier and then harder, and notice what happens. In a crescendo, the pitch goes flat; in a decrescendo, the pitch tends to go sharp.

(2) Developing breath support
Next, have the students play the higher octave. Unless they have good embouchures and proper breath support and intensity, they will play out of tune. While observing the indicator, they should attempt to make the ad-

justments required for playing in tune. At this time, the teacher can convince the students that they must use breath support and embouchure control to play in tune. The fact that notes are fingered properly does not guarantee that they will sound properly. Since students are apt to be more impressed visually than they are aurally, the aural element should be stressed. Furthermore, the teacher should point out that the harder saxophonists blow, the flatter they play; while brass players have a tendency to play sharp when they blow hard and without control. The situation illustrates the complexity of intonation problems in ensembles, and emphasizes the need for continual efforts to listen critically while playing.

(3) Improving tone quality
A darker signal in the strobotuner window indicates a clear, intense, resonant sound. A lighter signal usually indicates a weak sound which requires increased support.

Summary

A beginner's attitude tends to be positive. S/he wants to learn. The teacher should preserve that enthusiasm, capitalizing upon it whenever possible while pursuing a methodical approach to teaching and learning—a few things at a time: tone production, simple fingerings, tonguing, and then the coordination of these items. Tape-recorded lessons and performances can be very helpful in creating interest in self-evaluation and providing periodic measures of growth.

INTERMEDIATE LEVEL

Tone

As students progress to the point where they are able to express themselves musically, they should work toward greater refinement in performance, with particular attention to embouchure development and careful listening.

Playing major scales over the range of two octaves (holding each note for four slow counts and breathing between each note) provides an excellent exercise for the continued development of breath support and control, embouchure, tone, and intonation. The scales should be extended to include the

complete tessitura of the instrument, each note played with a resonant sound. Further attention should be given to variations in tone color inherent in the instrument's use of a double octave key mechanism. Efforts should be made to match tone quality between notes c^2 and d^2, and g^2 and a^2. Natural fullness in the lower register should be matched in the middle and upper registers by increasing the "cushion" of the lower lip and by drawing the corners of the mouth together slightly, but firmly, like a drawstring on a laundry bag.

As students become familiar with fingerings which produce the tones from c^3 to f^3, they should strive to improve the quality of these tones until they approach the fullness of sound produced in other registers. It is often helpful to have them memorize some high note studies so that note reading can be dispensed with while production of these tones is practiced.

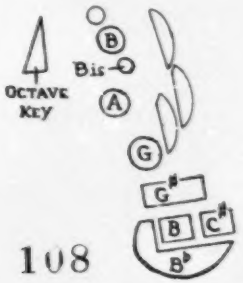
Further attention should be directed toward matching tone quality while executing changes between $c\sharp^2$ and d^2. Particular attention to intonation is also critical at this point. The "closed" fingering for $c\sharp^2$ should be demonstrated and then compared with open $c\sharp^2$.

Scale tones should be practiced with both breath and legato-tongued articulations at varying dynamic levels. A good practice is to start the tone softly, gradually build a crescendo to the fullest possible sound, and then gradually decrescendo to silence. Students must be careful to maintain the same pitch level throughout.

Fingering

Key Identification Chart

LEFT HAND:



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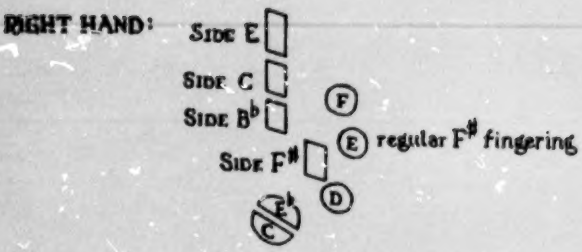
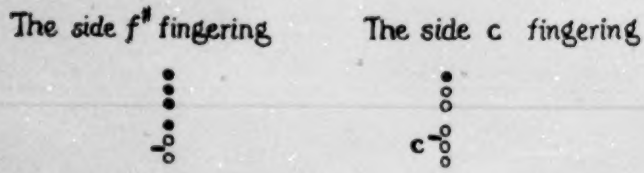


Correct left thumb technique should be reviewed. Slurring back and forth between c^2 and d^2 provides a simple exercise. The left thumb must be anchored to the plateau and rock toward the octave key with as little wasted motion as possible while the fingers are raised slightly whenever necessary, but lowered firmly at the note change. In general, keeping hand movements to a minimum will aid in the development of good hand and finger position.

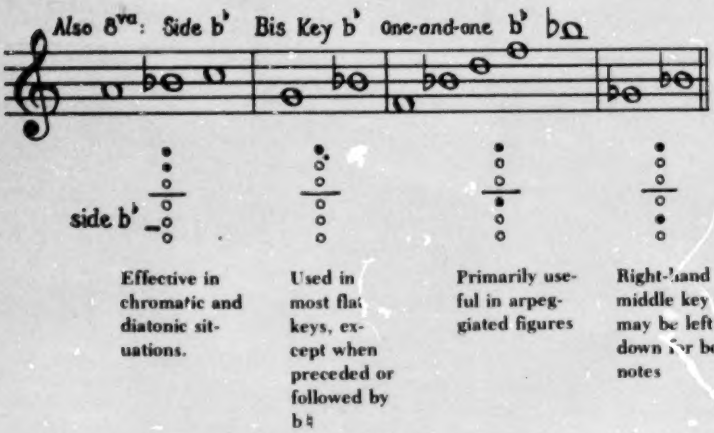
Students should be made aware of a number of the alternate fingerings available to saxophonists. A few basic ones have been included here. When the students learn to play chromatic scales, they should employ:



The side f♯ should be used when preceded or followed by f♮. The side c should be used when preceded or followed by b♮, but it should be avoided as a sustained tone because of its poor resonance and pitch qualities. The key is depressed by the base of the right index finger.

The note $c\sharp^2$, and sometimes $b\flat^1$, b^1, and c^2 are fingered like those an octave lower with the added octave key. This technique is applicable in context with the neighboring higher diatonic or chromatic tones when it is desirable to maintain a similar tone color, or for technical fluency. Students should be warned that it may be necessary to "favor" these closed-pipe fingerings to achieve good intonation (sharp on most saxophones).

Saxophonists have the following options available to them for B♭¹ and B♭²:

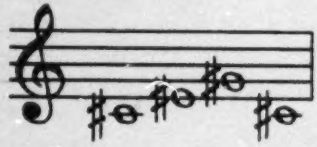

Also 8va: Side b' Bis Key b' One-and-one b' b0
side b'
Effective in chromatic and diatonic situations.
Used in most flat keys, except when preceded or followed by b♮
Primarily useful in arpeggiated figures
Right-hand middle key (f♯) may be left down for both notes

< Instrument must be in proper adjustment >

All modern saxophones are equipped with an articulated G♯ which enables the player to close the G♯ pad with any of the first three fingers of the right hand, while depressing the G♯ key with the little finger of the left hand. This makes it possible to play lower notes with a minimum of cross-fingering, *if* the instrument is in good adjustment. The G♯ key would be depressed for all notes in the following example:

In addition, most modern saxophones have an interlocking G♯ mechanism which allows the G♯ pad to be opened by depressing the C♯, B, or B♭ key with the left-hand little finger.

To discover the advantage of this situation, students might be asked to slur the following figure:



The example above would be fingered with the low c♯¹ key depressed throughout, employing the interlock to produce the g♯¹ with the same key that would produce the c♯¹. Of course, the enharmonic application of these devices (D♭ major triad) should be pointed out to the students. The acquisition and use of this mechanism, however, is debated among saxophonists on the ground that the left-hand little finger is one of the weakest fingers.

Vibrato

Vibrato is an integral part of a mature tone and the performer should be able to control it at will by increasing or decreasing the number of fluctuations of pitch, volume, and timbre per second, or by stopping it completely. According to the individual's own school of playing and the style of music being performed, the average speed used by professionals will vary from approximately 5 to 7 undulations per second.

Wind players employ a number of different techniques in producing vibrato on their instruments. Most successful saxophonists use a method called *jaw vibrato*. This requires a relaxed throat and a firm embouchure. The initial concept of jaw movement can be realized without the mouthpiece, if students are taught to vocalize a *wah-wah-wah* sound with a relaxed jaw alternately opening and closing in an up-and-down motion. Varying the speed from 2 to 6 measured pulses per second should facilitate the movement of the jaw. When the jaw is limber and unfettered by tension, the process can be transferred to the saxophone. The amount of perpendicular motion of the jaw to and from the reed is proportional to the fluctuation of the pitch.

Careful listening can guide performers toward the development of a vibrato which avoids the extremes of being too wide and slow, or too tense and fast. Before vibrato can be used effectively in melodic passages, however, it should be

mastered through practice with whole-note scales and measured undulations. A metronome can be useful for this purpose. In addition, students should be made aware of the fact that a freestyle, unmeasured, even vibrato is the ultimate application of these exercises to music. A mature performer's vibrato flows without regard to the number of pulsations per beat. Listening to professional string and vocal performances will strengthen this concept.

In any event, students should understand that vibrato will not compensate for poor tone quality and, in fact, may even make it worse.

Tone Production

It is generally conceded that there is no radical change in saxophone embouchure among the low, middle, and high ranges—if the instrument is in good mechanical condition. To avoid flatness in the low range and sharpness in the high range, the embouchure should remain almost constant for those notes played with or without the octave key. Tone production in the upper register requires only slightly more "pucker" of the lips around the reed and mouthpiece than in the lower register. Producing low notes on the saxophone is primarily dependent upon a firm embouchure, an open throat, and full diaphragmatic support. If a student encounters problems in producing a tone in this register, there may be an air leak in the instrument being played.

Summary

Intermediate students should have frequent opportunities to perform in bands, orchestras, stage bands, quartets, trios, and duets—in addition to solo performance. Saxophones are most frequently used in ensemble situations; for this reason, the ability to perform effectively as a member of a musical team is most important.

Since progress will seem slower at this stage, tape recordings can be very helpful in maintaining interest. Lessons and solo/ensemble performances should be recorded and played for critical listening. Ensemble tapes with prepared accompaniment can be used to develop overall musicianship, including tone production, advanced technical facility, and interpretive powers.

Students should be encouraged to practice regularly and to structure practice sessions for maximum efficiency. For example, a session might be arranged as follows:

(1) Warmup routine
- Whole-note scales, straight tone and vibrato
- Major and/or minor scales, limited to two or three keys at each session, played both legato and staccato (see *Scales for the Saxophone* by Sigurd Rascher listed in the Selected Resource Materials section at the end of this chapter)

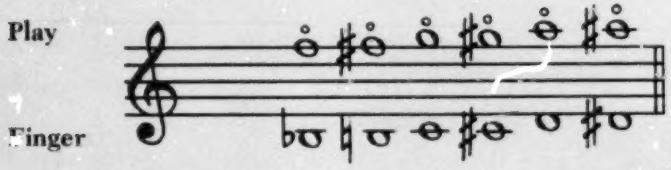
(2) Technical studies
(3) Solo material
(4) Chordal and scalewise patterns played by ear, limited to two or three at each session but including:
- Chords—major sevenths, dominant sevenths, minor sevenths, augmented sevenths, diminished sevenths, and minor sevenths with flatted fifth
- Scales—major; natural, harmonic, and melodic minor; and whole-tone

ADVANCED LEVEL

The advanced level is a period of artistic realization. Major emphasis should be given to perfecting skills and increasing knowledge to maximal degrees. The goal should be the attainment of mature musical concepts and performance skills which make it possible for the player to communicate with meaning and pleasure. The teacher should become less and less an instructor, and more and more a guide who encourages the students to develop their creative abilities and refine their musicianship in highly flexible and relatively unstructured lessons.

Students at the advanced level should develop a greater degree of sophistication in the control of tone and intonation. Daily work on sustained tones and volume control, with increased emphasis on proper breathing, should therefore be encouraged. In addition, they should refine the sound they produce by extending the upper range, and by working on the overtone series. Some performer/teachers advise their students to extend this range by "vocalizing" the high notes. They also suggest playing the exercises in elementary method books an octave higher than written. They recommend that young students play harmonics on b♭ and on other fundamen-

tal tones in order to gain flexibility in training the ear and manipulating the throat and lip.



Bugle calls beginning on f^2 (fingering the fundamental b♭) can also be useful exercises. The altissimo register (above f^3) needs more embouchure tension (without biting), an *eeh* position of the tongue and throat, and greater airspeed and diaphragmatic support. Exercises for developing the embouchure and the ability to place the sound are included in *Top Tones for the Saxophone*, by Sigurd Rascher; *High Harmonics*, by Ted Nash; and *Beginning Studies in the Altissimo Register*, by Rosemary Lang. (See the Selected Resource Materials section at the end of this chapter.)

Mouthpiece and Reeds

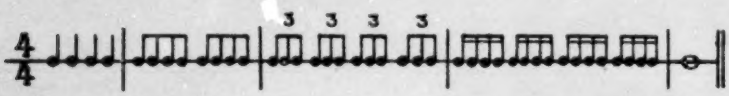
At this stage of the student's development, a change of mouthpiece might be advisable. This will depend upon the type and quality of sound desired. Various mouthpieces should be tried (e.g., those made of hard rubber, plastic, or metal; those with a more open lay; those with a small, medium, or large chamber; etc.). In performing on various tip openings, it is important to remember that the wider the opening, the softer the reed should be.

The ability to select and adjust reeds is also a critical factor in producing a controlled tone. Serious students should make full use of available texts with information on reed adjustment, and explore this matter with other single-reed players and professionals.

Articulation

Articulation demands persistent attention, and considerable time must be devoted to its refinement. The use of a metronome is essential if the player is to be made aware of the need for rhythmic stability while tonguing at all tempos. Play-

ing the exercise below at progressively faster tempos should improve the student's ability to articulate more precisely.



The exercise can be made increasingly difficult by combining it with melodic patterns, styles, intervals, scales, etc., and applying the following practices:

- Legato tongue a given note, using a *doo* articulation;
- Legato tongue while changing notes, with attention given to the coordination of tongue and fingers;
- Vary the rhythms, measure by measure, and apply them to scale patterns;
- Then repeat the exercises in a staccato style.

Advanced students should have reached a level of maturity in technique which enables them to play at sight the more difficult portions of the standard literature. Accordingly, they should have command of all major, minor, and chromatic scales in a variety of articulated rhythmic and interval patterns over the range of the instrument.

Summary

Students at the advanced level should participate in as many diverse musical activities as their time and interests permit. (Organization, ensemble, and solo experiences should be accompanied by evaluations of performance in terms of quality, style, and interpretation.) They should understand and be able to perform in the varied styles of different musical periods. Finally, the demands made on saxophone players make it advisable for students to learn how to double on other woodwind instruments and to transpose, especially if they are considering professional careers in public school music education or as woodwind specialists in jazz.

Advanced students may develop an interest in improvising. If so, they should realize that improvisation requires an informed sense of hearing and a fundamental knowledge of scales, chords, theory, and harmony. Various books and records are available for this purpose.

At this level of learning, students should have had sufficient experience with basic skills, knowledges, and attitudes to develop their own styles of playing. Professional recordings will acquaint them with the differing styles of saxophone artists, and they can emulate these and/or refine their own by playing with records and tapes which provide piano or orchestral accompaniments. Whenever possible, however, students should be encouraged to play with live professional groups.

IV. Selected Resource Materials

BOOKS AND PAMPHLETS

Hemke, F. L. *A comprehensive listing of saxophone literature;* 2d rev. ed. Elkhart, Indiana: H. & A. Selmer, Inc., 1961. Available from Derby Music Service, 5143 Busch Boulevard, Tampa, Florida 33617.

An extensive listing of foreign and American saxophone literature.

———. *Teacher's guide to the saxophone.* Elkhart, Indiana: H. & A. Selmer, Inc., n. d. Available from Derby Music Service, 5143 Busch Boulevard, Tampa, Florida 33617.

Kochnitzky, L. A. *Sax and his saxophone.* New York: Belgian Embassy, 1964.

Londeix, Jean-Marie. *125 ans de musique pour saxophone.* Paris: Alphonse Leduc, 1971. Available from M. Baron Company, P.O. Box 149, Oyster Bay, New York 11771.

Masteller, J. & D. E. McCathren. *Modern saxophone technique.* Winona, Wisconsin: Hal Leonard Publishing Corporation, n. d.

McCathren, Donald. *The saxophone book.* Kenosha, Wisconsin: Leblanc Publications, Inc., n. d.

Opperman, Kalmen. *Handbook for making and adjusting single reeds.* New York: Chappell and Company, 1956.

Includes procedures for making and adjusting saxophone reeds.

Teal, Larry. *The art of saxophone playing.* Evanston, Illinois: Summy-Birchard Company, 1963.

An authoritative treatise which contains detailed explanations of all phases of saxophone playing, including tone

production and vibrato, breathing, fingering techniques, reed adjustment, etc.

METHODS AND ETUDES

Berbiguier-Mule. *18 exercises or etudes.* Paris: Alphonse Leduc, n. d. Available from M. Baron Company, P.O. Box 149, Oyster Bay, New York 11771.

Cantwell, D. C. *Blues on time—an approach to jazz improvisation.* Whitesboro, New York: Donald C. Cantwell, Publisher, 1969.

A combination musical arrangements and instruction booklet.

Gillet, Fernand. *Studies for the advanced teaching of the oboe.* Paris: Alphonse Leduc, n. d. Available from M. Baron Company, P.O. Box 149, Oyster Bay, New York 11771.

Often used by saxophonists.

Karg-Elert, Sigfrid. *25 capricen und sonate für saxophon solo.* Op. 153. Frankfurt am Main: Wilhelm Zimmerman, n. d. Available from C. F. Peters Corporation, 373 Park Avenue South, New York, New York 10016.

Klose, H. E. *Twenty-five daily studies.* New York: Carl Fischer, Inc., n. d.

Interesting technical studies in easy keys.

LaMotte, Antony. *Dix-huit etudes.* Paris: Editions Billaudot, n. d. Available from Theodore Presser Company, Presser Place, Bryn Mawr, Pennsylvania 19010.

Lang, Rosemary. *Beginning studies in the altissimo register.* Indianapolis: Lang Music Publications, 1971.

Lee, Samuel. *Melodic and progressive exercises for saxophone.* Boston: Cundy-Bettoney, n. d.

Londeix, Jean-Marie. *Gammes et modes.* Paris: Alphonse Leduc, 1970. 2 vols. Available from M. Baron Company, P.O. Box 149, Oyster Bay, New York 11771.

McCathren, Donald. *Saxophone fingering chart.* New York: Edward B. Marks Music Corporation, n. d. Available from Belwin-Mills Publishing Corporation, 25 Deshon Drive, Melville, New York 11746.

Includes a logical approach to learning fingerings, chromatic scales, and high harmonic fingerings.

Mule, Marcel. *Cinquante-trois etudes.* Paris: Alphonse Leduc, n. d. 3 vols. Available from M. Baron Company, P.O. Box 149, Oyster Bay, New York 11771.

———. *Etudes variees.* Paris: Alphonse Leduc, n. d. Available from M. Baron Company, P.O. Box 149, Oyster Bay, New York 11771.

———. *Gammes et arpeges.* Paris: Alphonse Leduc, 1946. 3 vols. Available from M. Baron Company, P.O. Box 149, Oyster Bay, New York 11771.

Nash, Ted. *High harmonics.* New York: Leeds Music Corporation, n. d.
For the development of the upper register. Contains excerpts from records.

Pares, G. & I. Albert. *Daily exercises for saxophone;* ed. by N. W. Hovey. Melville, New York: Belwin-Mills Publishing Corporation, n. d.

Parisi, Stanislao. *Forty technical and melodious studies for saxophone.* Bks. I & II; arranged by G. Iasilli. San Antonio, Texas: Southern Music Publishing Company, n. d.

Prestini, G. *Raccolta di studi* (for oboe). Milan: G. Ricordi and Company. Available from Belwin-Mills Publishing Corporation, 25 Deshon Drive, Melville, New York 11746.
Often used by saxophonists.

Rascher, Sigurd. *158 saxophone exercises.* Copenhagen: Wilhelm Hansen, n. d.

———. *Scales for the saxophone.* New York: McGinnis and Marx, n. d. Available from Boosey and Hawkes, Inc., Oceanside, New York 11572.

———. *Top tones for the saxophone.* New York: Carl Fischer, Inc., n. d.
Recommended for the player in approaching harmonics, control, etc.

———. *24 intermezzi,* with piano accompaniments by Erik Leidzen. New York: Bourne Company, n. d.

Rossari, Gustavo. *Fifty-three melodious etudes.* Bks. I & II; arranged by G. Iasilli. San Antonio, Texas: Southern Music Publishing Company, n. d.

Rousseau, E. *Saxophone method for beginning students.* Kenosha, Wisconsin: Leblanc Publications, Inc., n. d.
This is especially good for clarinet players learning saxophone.

Rubank, Inc. *Methods for saxophone: elementary, intermediate, advanced.* Miami, Florida: Rubank, Inc., n. d.
Suggested for use in addition to other methods.

Schmidt, William. *10 contemporary etudes.* Los Angeles: Western International Music, Inc., n. d.

Sellner. *Methode pour saxophone; part II.* Costallat. Available from Theodore Presser Company, Presser Place, Bryn Mawr, Pennsylvania 19010.
Articulation studies in a variety of keys.

Teal, Larry. *The saxophonist's workbook.* Ann Arbor, Michigan: University Music Press, n. d.
Highly recommended.

Viola, Joseph. *Technique of the saxophone.* Vols. I-III. Libertyville, Illinois: National Educational Services, n. d.

FILMS AND FILMSTRIPS

Saxophone care. (filmstrip). Encyclopaedia Britannica Educational Corporation, 425 North Michigan Avenue, Chicago, Illinois 60611. 1966. 46 frames. sound. color. 35 mm. (filmstrip series no. 11020, band instrument care).
Developed by teachers for teachers and students, each step is clearly illustrated by vivid closeups.

RECORDINGS*

American music. MRS 22868. Mark Educational Recordings, Inc., 4249 Cameron Road, Buffalo, New York 14221. Donald Sinta, alto saxophone.
This first record of a recital series developed by Mark Educational Recordings is of particular interest to saxophonists because it includes original works for the instrument by Creston, Hartley, Benson, and Heiden.

The art of Cecil Leeson. Vol. I. ENS 2002 (869L-2002). Enchante Records. Muncie, Indiana.

Cecil Leeson. Leon Stein Quintet for Saxophone and String Quartet. Enchante Records. Muncie, Indiana.

Chicago Saxophone Quartet. Coronet S 1708.
Four artist/teachers perform new works and arrangements for SATB.

Contest and concert solos for the saxophone. Austin Custom Record No. 6601. Harley Rex, saxophone.

Contest music for saxophone. Selmer No. 4150. Fred Hemke, saxophone.

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*The following list of instructional recordings is representative, rather than complete. For a more extensive collection, consult the instrumental music section of such catalogs as the *Schwann Artist Issue*, published by W. Schwann, Inc., 137 Newbury Street, Boston, Massachusetts 02116.

Helpful performing tips for the student are printed on the jacket of this album which was designed with educational objectives. Recommended for the collections of students, teachers, and schools.

Eugene Rousseau plays saxophone. Coronet LP 1292.

Eugene Rousseau—the virtuoso saxophone. Coronet LP 1601.

The two Rousseau recordings (Coronet LP 1292 and LP 1601) are educational recitals which would be a worthy addition to school or personal libraries. Representative composers include Bonneau (unaccompanied *Caprice*), Chopin, and Hindemith.

French impressions. MG VS-6111. Verve Records. The Hollywood Saxophone Quartet.

Leblanc Fine Arts Saxophone Quartet. Coronet S 1712.

Features the work of Jean-Jean, Clerisse, and Pierne performed by music teacher/performers.

Marcel Mule saxophone recital. Available from Selmer Division of the Magnavox Company, Box 310, Elkhart, Indiana 46514.

Music for saxophone quartet. MHS 817. The Marcel Mule Quartet. Available from the Musical Heritage Society, Inc., 1991 Broadway, New York, New York 10023.

The New York Saxophone Quartet. MES 32322. Mark Educational Recordings, Inc., 4249 Cameron Road, Buffalo, New York 14221.

Paul Brodie, saxophone. Golden Crest Recital Series, RE 7028.

Vincent Abato, alto saxophone. H-71030. Nonesuch.

Includes music by Ibert, Glazunov, etc.

I. Introduction

HISTORICAL BACKGROUND

The bassoon is a double-reed instrument with a range from BB♭ to e^2. However, the upper register is generally limited to d^2 because the higher notes make heavy demands upon the player's embouchure and are not always of the best quality. As its name implies, the bassoon was originally used for bass tones; but by the 18th century, its value as a tenor voice had been recognized and it is now an established member of the orchestra with a wide range of melodic and bass functions. Music for the instrument is written as it sounds, in bass or tenor clef as needed. The treble clef is also used, but mainly in French edition music.

Little is known about the origin of the bassoon. Among its predecessors were the early 16th-century Italian *phagotum*, a single shaft of wood with two parallel bores connected at the base in the shape of the letter U; the late 16th-century English *curtal(l)* and *double curtal(l)*, which were used in bands; and the 16th-17th-century *dolcian* or *dulzian*, a small one-piece, two-keyed musical instrument with a dulcet tone from which its name derives. A woodcut made by J. C. Weigel of Nuremberg in 1698 seems to indicate that the dulzian was gradually replaced by a jointed, three-keyed *bassoon* that resulted when the two bores in a shaft were converted to a long joint and a tenor joint connected by a U-shaped double joint and extended by the addition of a bell that enabled the instrument to produce the BB♭ alluded to above. By 1738, the standard model had four keys, the last of these being a G♯ key operated by the right-hand little finger which established the basic pattern for holding the instrument.

The bassoon was first defined in an English dictionary in 1706, its name adapted from the French *basson* and the Italian *bassone* or *bassono*. There were four members of the family: the *fagottino* or *discant bassoon*, which sounded an octave above the standard model; the *tenoroon* or *tenor bassoon*, which sounded a fourth or a fifth above; the low *quart-bassoon*, which sounded a fourth below; and the low *quint-bassoon*, which sounded a fifth below. Currently there are two basic models in use: the standard model bassoon and the

contrabassoon (also called a *contrafagotto* or *double bassoon*), which sounds an octave below.

The first scores for bassoon were written by the German composer Heinrich Schutz in 1619. During the years that followed, liturgical music frequently included parts for the instrument which, in combination with the cello and the clarinet, had replaced the organ in most English church services. Lully wrote passages for the bassoon in his opera *Psyche* in 1674, and Keiser used it to accompany some of the arias in his *Octavia* in 1705. Johann Sebastian Bach also found the instrument of value to his work.

By the early part of the 19th century, developments in woodwind keywork and an extension of the upper range had given the bassoon a full chromatic scale. Two distinct models had emerged:

(1) The Heckel, German system bassoon, which was designed and built by Carl Almenraeder and J. P. Heckel in 1831; and

(2) J. N. Savary's French or conservatory system bassoon.

The models differ in construction, size of bore, location and dimension of holes and key mechanisms, shape of bell, style of reed, and quality of sound. Chiefly produced by Buffet, the French system is popular in Spain, France, and Italy. The Heckel system is preferred in the other European countries and in the United States, although both French and German models are made here. For more than a century, Heckel bassoons were highly prized throughout the world; but since the late 1940's, it is American artists and manufacturers who have been responsible for improving the instrument in terms of performance and methods of production.

SELECTION, CARE, AND REPAIR

The Instrument

The standard model bassoon has five major parts:

- The bocal or crook, a curved metal tube to which the double reed is fitted;
- The tenor joint or wing, which derives its name from the fact that it has a wooden projection with oblique bores for the first three fingers of the left hand;
- The double or boot joint, which connects the tenor joint or wing to a long or bass joint and makes a manageable

instrument of an 8½-foot conical tube;

- The long or bass joint referred to above; and
- The bell, which usually has a plastic or ivory rim.

Most bassoons are made of hard maple because it is easier to shape, lighter in weight, more resistant to cracking, and easier to finish than most other woods—although rosewood and sycamore are also used. The surface of the instrument has an ebony or mahogany stain, and is thoroughly lacquered. The bore is either impregnated with a special substance or carefully oiled to prevent moisture from entering the pores. The wing joint and the small side of the boot joint are lined with hard rubber or ebonite; and all the metal parts are made of nickel silver, German silver, or brass. The end of the bell is fitted with an ivory or plastic ring which not only decorates the instrument, but also helps to prevent the wood from cracking. The material and workmanship used in finishing these parts are usually reliable indicators of the quality of the bassoon as a whole, and should therefore be examined in selecting a good instrument.

Some bassoons are made of polypropylene, ebonite, or fiberglass. These are often chosen for beginning students because they are less expensive than wooden models and are generally more capable of withstanding marked or sudden changes in temperature and humidity. A few manufacturers produce a special bassoon for beginners that is smaller than the standard model and has fewer keys.

Since a player's habits tend to be shaped by the instrument being used, it is wise to select one of fairly high quality. Ebonite or plastic models are usually sufficient for beginners; but the serious student should have a 22-key Heckel system bassoon made of hard maple or rosewood. Unfortunately, the quality of instruments varies greatly not only from one brand to another, but even among the products of a single manufacturer. For this reason, it is advisable to examine, listen to, and play a number of bassoons—preferably with the assistance of a professional performer—before making a final choice. The opinions of a competent bassoon repairman are also valuable, because he can state from his experience which instruments seem to hold up best under certain conditions, what their strengths and weaknesses are likely to be, and the nature of any quirks or peculiarities they are likely to possess.

At the very least, the bassoon should be equipped with the following items:

- An automatic pianissimo or "whisper" key;
- An inner lining of rubber or plastic in the tenor joint, and a similar lining of rubber or metal on the small side of the boot joint;
- Two brass or silver-plated bocals, numbers 1 and 2;
- Guards for the B♭, D, E, and G spatulas;
- Connecting rollers for both sets of thumb and little finger keys;
- An automatic ring key for G, with cork pads; and
- An F♯ trill key on the tenor or wing joint.

In addition, the instrument should be checked carefully for:

- Tone quality—the bassoon should produce a full tone with "cutting power";
- Intonation—the bassoon should be in tune with itself;
- Even scale—the tone quality should be balanced throughout the range of the instrument;
- Resistance; and
- Key action—this should be light to the touch, with springs regulated for balanced pressure within key groups operated by the same finger.

Finally, the instrument to be purchased should be thoroughly examined for cracks. Additional guidelines, plus a detailed discussion of desirable options, are included in William Spencer's *The Art of Bassoon Playing* (see annotated reference in the Selected Resource Materials section at the end of this chapter).

Careful attention should also be given to the choice of bocal, since this part of the instrument affects its pitch, response, resistance, and tone quality. Bocals come in a variety of metals, bores, wall thicknesses, and lengths. The letters *A*, *B*, *C*, and *D*, alone or in combination, indicate the style of the bocal and the metal of which it is made. The numbers *0*, *1*, *2*, *3*, and *4* denote length: the higher the number, the longer the bocal and the flatter the pitch. Most bassoons are equipped with two bocals, a number 1 and a number 2.

A very important part of the student's instruction in bassoon relates to the care and maintenance of the instrument. Whenever it is not in use, the bassoon should be kept in its case and the case enclosed in a protective cover for storage and carrying. Extremes and sudden changes in temperature or humidity should be avoided, as these can cause cracks in the body and rapid deterioration of the pads and keys. If the

instrument is cold, it should be warmed to room temperature before it is played—and always *from the outside in*. Small cracks in the surface will not affect the sound, but they should be repaired as soon as possible before they deepen or reach a tone hole. Finally, an assembled bassoon should be carried by the wing *and* the bass joints, and the bocal should be removed if the instrument is to be carried for any distance outside its case.

There is a proper way to assemble a bassoon:

- The wing and boot joints should be connected first. With the wing joint in the left hand (the thumb in the curved-out part) and the boot joint in the right, the two segments should be pushed together with a gentle, twisting motion. Undue pressure or strain on any of the posts or keys—especially on the automatic whisper key—should be avoided. When the curved part of the wing joint is in line with the large hole for the bass joint, the section should be placed *in the instrument case* (not on a table or chair) until the next piece has been assembled.
- The bell should be added to the bass joint with the same gentle, twisting motion—the bell in the right hand with the thumb depressing the B♭ key and the joint in the left, held under the arm and against the body for support.
- Then, with the boot and wing section (which was assembled earlier and laid in the case) held in the right hand, the bell and bass section should be grasped with the left and slipped into place with a slight twist. Adjusting the joint lock will keep the pieces in proper alignment.
- The bocal should be inserted last, with the grip at the large end to avoid bending it.

The assembling process is reversed when the bassoon is taken apart. Gripped at the large end as before, the bocal should be carefully removed, wiped with a soft cloth, and returned to the case. Then the joint lock should be released, the bell and bass section separated from the wing and boot section, the bell removed from the bass joint, the boot removed from the wing joint, and each part placed in the case before cleaning.

After the bassoon has been completely disassembled, its interior should be swabbed with a triangular piece of chamois attached to a cord and weight or a soft cloth wrapped around

a rod, like those designed for cleaning guns. Unfortunately, the swabs that usually come with the instrument are less than satisfactory because they rarely dry the bore and often leave lint in the tone holes. If a piece of chamois is used, it should be no larger than 4 inches on any side or it will stick in the wing joint, and the weight should be covered with something like adhesive tape or it may scratch the interior surfaces.

The wing joint should be cleaned by drawing the chamois through the bore two or three times. In cleaning the boot joint, where most of the moisture collects, the chamois should be laid over the hole, pushed to the bottom with a swab, and then pushed and pulled by the swab and the weight. The fingerholes should be blown free of moisture as the bore is being cleaned. The bell and bass joints should also be wiped; but these require much less effort since very little moisture tends to collect there. Some of the pads will get wet and should be dried out by gently depressing the pad upon a piece of cloth or blotting paper inserted between it and the tone hole. The pads on the lower end of the boot joint, especially those on the low G and G♯ keys, are particularly susceptible because this area collects so much water that bassoonists often remove the bass joint and pour the water from the boot during an interval in playing. In order to preserve the pads, the student should keep his instrument upright even during rest periods rather than lay it across his lap where the water can run out through the tone holes.

Once the interior of the instrument has been thoroughly dried, the player's fingerprints and perspiration should be wiped from the outer surface with a soft cloth and each section carefully encased—but without locking the bass and wing joints, for the lock could be torn from the wood if the case is dropped or badly bumped.

At least once a week, the bocal should be washed with lukewarm soapy water and the keys dusted with a small paintbrush. A commercial bocal cleaner, a very small brush, or a few pipe cleaners fastened together can be helpful in removing food particles or other deposits of foreign matter that do not wash away when clear water is run through the bocal. The vent hole and the hole for the whisper key should be cleaned with a small broom straw—never a common pin or needle, as either of these could enlarge the holes.

Every 6 to 8 weeks, the wooden surface of the bassoon should be cleaned and polished with a small amount of furni-

ture polish and the metal parts wiped with a jeweler's cloth. Paste or liquid polishes should never be used on or near the keys, as these can cause gumming. The fingerholes in the wing and boot joints should be cleaned periodically with a toothpick, a piece of clarinet reed, or a pipe cleaner, and then lightly oiled with a *very small* amount of bore oil applied to a pipe cleaner.

The key bearings and the bore of a wooden bassoon will also require periodic oiling, if the instrument has been used more than a year—but with great care and exceedingly small amounts of the proper oil. The bearings should have a tiny drop of high-grade nongumming oil (such as that used by watch repairmen) applied with a toothpick at each bearing point. In addition, unless the wood has been treated to prevent penetration by moisture, the bore of the instrument should be oiled lightly every 6 to 9 months with boiled linseed oil or a special bore oil applied to a swab, or to a piece of cloth wrapped over a swab, which is then wrung out to remove any excess oil. The bore of the large side of the boot joint governs the procedure: because of the moisture that accumulates in this area, the instrument should not be played for 2 to 3 days before the bore is oiled so that the wood will have an opportunity to dry out, and for 2 to 3 days afterward in order to let the oil soak in. It is advisable to slip a piece of paper under the pads on the instrument to shield them from the oil. The bell and bass joints should not be oiled more than once a year, if at all, but should be dusted about once a month.

If the bassoon is cared for in the manner described above, it should perform well and require few, if any, adjustments and repairs.

The Reed

Good double reeds are essential for quality performance on the bassoon, and a major influence on the student's concept of its sound. They are also short-lived and expensive. Traditionally, bassoon reeds have been cut by hand from a variety of cane known as Arunda Donax; but some manufacturers are experimenting with synthetic materials and/or machine-processing in an effort to produce cheaper, longer lasting reeds that are sufficiently high in caliber. As a result, plastic reeds are now available which have a uniformity of shape and

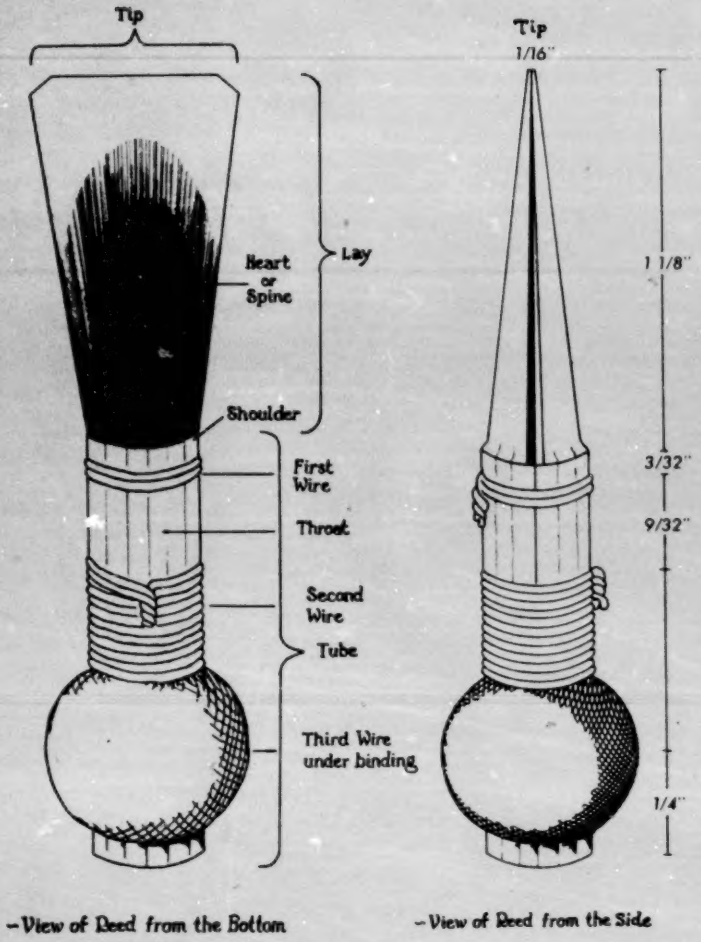
shading; and machines have been developed which will not only cut the cane into appropriate lengths and shape the reeds from it, but will also finish the lay and wrap the final product. Like those made of plastic, cane reeds cut by machine are symmetrical and evenly shaded; but they are generally preferred to plastic reeds because of the quality of the sound produced by the cane. In any case, the reeds must be adjusted to the player's particular requirements before they can be used.

From the very beginning, then, bassoon students should have a generous supply of reasonably good reeds and their lessons should include increasingly detailed information about:

- The composition, styles, shaping, and measurements of double reeds for the bassoon;
- The relationship between these items and the sounds a reed will produce;
- Methods and criteria for selecting reeds;
- Techniques for adjusting reeds; and
- Procedures for making reeds.

Fully illustrated descriptions can be found in some of the references on pp. 138–139, but the following material should be useful as an overview.

Selecting a good reed begins with a careful examination of its parts and approximate measurements (see diagram on next page).



– View of Reed from the Bottom

– View of Reed from the Side

Adapted from **Illustration 6: Parts of the bassoon reed, with standard measurements** on p. 24 of *The Art of Bassoon Playing* by William Spencer (Summy-Birchard Company, rev. ed., 1969) with permission from the publisher.

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- Is the tube perfectly round, both inside and out, from the base to the second wire?

  The tube is the part of the reed into which the bocal is inserted. It must be perfectly round and snug in fit or air leaks will result. Slight irregularities can be removed by a small rat-tailed file or additional reaming; but if the condition is serious, the tube may need remolding.
- Are the wires neatly wound about the body of the reed?

  The wires are usually made of soft brass. Their chief function is to hold the various parts of the reed in place after the tubing has been formed; but because their size, position, and tightness affect the vibration of the blades, they are important items to consider. The wires on French models are fairly heavy and trimmed off close to the tube; those on German models are longer and bent downward with a twist, as shown in the diagram. In either case, the wires should be evenly wound and close to the body of the reed, without cutting into the rind of the cane (if cane is used). This is especially true of the first wire, which might even be slightly loose—for when the reed is wet, the cane expands and a wire that is too tight will impede its vibration.
- What is the shape of the throat?

  In essence, the throat is an extension of the tube. It should be round at the second wire, perfectly smooth inside, and elliptical to almost flat at the first wire where it relates to the lay. This is also an important item to examine, for the contour of the reed at the shoulder is a major factor when the lay is scraped by hand. Both shape and smoothness can be checked by looking through the reed from the bottom.
- What is the shape of the lay, and how well has it been formed?

  The lay is the contour of the blades between the shoulder and the tip. If the reed has a core of thicker cane or plastic (see "heart or spine" in the diagram), it will produce a dark, mellow tone and is probably a German model; but if the blades are shaded evenly, as in the French model, the sound will be light, "reedy," and somewhat nasal in quality. The lay can be examined by looking at the blades against a light, feeling them with thumb and finger, and/or comparing the lateral proportions and the longitudinal taper. The thickness of the

center and the corners, and the taper from the center to the corners, should be the same on both blades. Turning the reed against the light so that it strikes the surface of the blades at a slight angle may reveal imperfections that are less easily discerned when the light passes directly through the blades. Dark spots indicate thicknesses that can be scraped away; but very light spots usually mean that the reed has been gouged too deeply, and this situation cannot be remedied.

- Finally, if the reed is made of cane, what is its quality?

  Healthy, seasoned cane is a deep yellow in color (never a pale or greenish yellow). Its bark or rind is waxy and flecked with brown. In good reeds, the cane has a fine, straight grain running parallel to the sides of the blades. Those with brown spots should be avoided.

After the reed has been examined thoroughly, it should be soaked in water (but only to the first wire) for 3 to 5 minutes and then tested for air leaks, playing quality, and sound in the following ways:

The crow test

Place the reed lightly between the lips up to the first wire and blow through the reed, without exerting lip pressure on the blades, until it produces a double-pitched sound or "crow" in which the lower pitch predominates. Many professional bassoonists tune the crow to third space e♭. The sound of the crow and the amount of wind pressure required to produce it indicate how the reed will play and what adjustments, if any, will be needed. For example:

- If the higher pitch predominates and the crow is difficult to produce, the reed may be too stiff and/or the tip opening too wide; but
- If the sound is flabby and too easily produced, the blades are probably too close at the tip and/or too thinly scraped.

The pop test

Place the reed between the lips, cover the end of the tube with a finger, suck out all the air, and quickly pull the reed from the mouth. The blades should remain closed for a moment or two and then "pop" open.

- If the blades fail to stay closed, they are probably too stiff and/or the tip opening is too wide; and
- If they stay closed for more than 2 seconds, they are probably too thinly scraped, too close at the tip, or both.

The playing test

With the assistance of a competent performer, it is advisable to check the reed for:

- Ease of response and tone quality
  Play slow, slurred scales in F, G, and C, comparing the quality of the tone with the amount of pressure required to produce it. The reed should produce a full, free, resonant tone with relative ease.
- Intonation
  Play third space e and the E an octave below at a dynamic level of forte, and compare the two pitches. Then open and close the E key while playing third space e and note the change, if any, in the pitch. Repeat the comparison test with third space e♭ and the E♭ an octave below. Then open and close the B hole and the B♭ key while playing third space e♭. If the pitch is accurate in these and/or similar tests, the reed should play well throughout the range of the instrument.
- Attack and staccato response
  Test the reed by attacking the C in each register and playing a staccato scale and an appropriate passage from bassoon literature. The tip of the reed, the area just behind the tip, and/or the tip opening may need to be adjusted to the player's embouchure for improved attack and staccato response even if the reed is a good one; but these are minor changes that are quickly and easily accomplished.
- Dynamic contrast and flexibility
  These are also important criteria, but the reed must be "broken in" before it can be tested for them. In general, however, if the reed has passed the tests described above, it should be capable of producing quality tones at most dynamic levels in all registers with relative quickness and ease.

The final judgment is a matter of personal preference; for having thoroughly examined and experimented with a variety of reeds, the player will select the ones which meet his/her

special requirements—or make his/her own. This aspect of bassoon study is often most appealing to young students, and the results of early efforts can be surprisingly good. There are several good books on the subject; the equipment for making reeds is fairly inexpensive; the activity should increase the students' understanding of the connection between the characteristics of a reed and the sounds it will produce; and their growing skill and knowledge might foster a sense of pride and independence that will enhance their interest in music. For these reasons, even beginners should be encouraged to make and adjust their own reeds.

Because the quality of a reed is affected by so many variables, any guidelines for adjustment must be either very detailed or overly general. The following suggestions are therefore intended as an introduction to the subject, and the teacher is advised to consult the references given at the end of this chapter for more specific information.

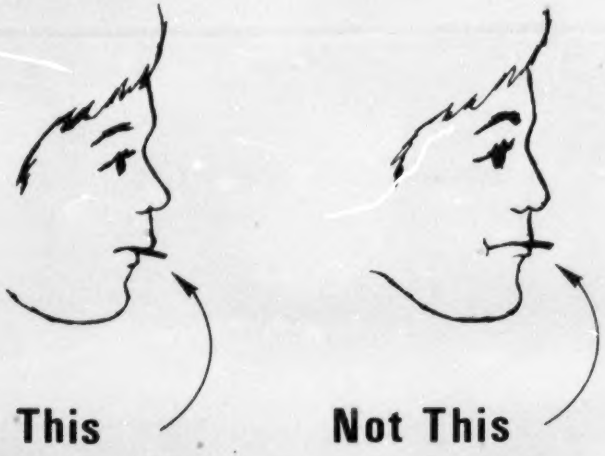
- As a preliminary step to playing or adjustment, soak the reed up to but not beyond the first wire until the sides close (approximately 3 to 5 minutes) and then rub the blades with a finger, a fine emery board, or a piece of Dutch rush until the pores are closed and the grain ceases to rise.
- To open the tip and increase the arch at the back, place the reed on a mandrel and squeeze the first wire at the sides with a small pair of pliers, squeeze the second wire from the bottom, and clip off a sliver of cane from the tip. Do *not* tighten the wires by twisting the ends.
- To close the tip and decrease the arch at the back, squeeze the first wire from the top and the bottom, squeeze the second wire from the sides, and scrape some of the cane from the tip.
- To decrease the arch caused by a first wire that is too tight, replace the wire with a new one and twist the ends in a direction opposite to the original twist.

Squeezing the wires in corresponding places will produce reverse results, and it is the first wire that has the greatest effect upon the arch and, as a result, upon the tone quality of the reed. If the tone is desirable as it is, any change in pitch, response, or resistance should therefore be made by adjusting the *second* wire rather than the first.

After each playing, the reed, like the instrument, should be carefully cleaned and stored. Rinsing the blades and flushing the tube with a stream of warm *not hot* water will remove any residue of saliva or food particles and keep the blades vibrating freely. A small feather or pipe cleaner inserted from the back of the reed and drawn out through the tip can be used to swab the interior, if necessary. Once it is clean, the reed should be wiped with a soft cloth and placed in a storage case that is not airtight. The best type contains a mandrel for each individual reed, but a small box lined with cotton should be sufficient.

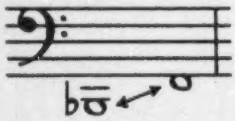
TUNING PROCEDURES

The bassoon tunes to a for orchestra (one octave below the oboe a^1-440 cps) and b♭ for band. If the instrument plays flat with all the joints tightly pushed in, the pitch should be sharpened by using a shorter (no. 1 or 0) bocal, by reaming the reed, or by shortening the blades. If it plays sharp, either a longer (no. 2 or 3) bocal or a longer reed should be used. If the bassoon is not in tune with itself, the student's embouchure should be checked to make sure that the lower lip is back toward the tip of the reed and that the upper lip is near the wire (see diagram below).



If the student tends to play very flat in the high registers, the situation can usually be remedied by increasing breath support, contracting the lips around the reed (without tighten-

ing the jaw or teeth), and taking more reed into the mouth. The opposite procedure should be used in correcting the characteristic sharpness of the tones between BB♭ and F.



A slight backward movement of the lower jaw helps in lowering the pitch, and a slight forward movement tends to raise it. Students who transfer from clarinet to bassoon, a very common transfer, tend to play sharp in the upper register. They should drop the lower jaw back and conceive of the lips as a *cushion*, rather than a vise.

II. Method Criteria

In selecting method books and materials, it is important to consider the age, previous experience, and particular needs of the student(s) with whom they will be used, for these are prime factors in determining the rate at which learning can take place. Some of the commercial publications are very well designed and include supplementary solo and ensemble references which are valuable for both teacher and student. Self-instruction manuals are not recommended as basic tools for learning bassoon, but they can be useful as supplements to regular class sessions. Whatever the choice, the materials should:

- Be sequenced in a way that will make students feel that they are moving forward with each lesson;
- Provide sufficient drills and exercises to assure both mastery and reinforcement of skills; and
- Include fingering and trill charts, progress charts, and a number of helpful and interesting diagrams and illustrations.

In addition, a beginner's book should have labeled illustrations of the bassoon and its parts, plus a clear description of their functions; instruction on the care and storage of the instrument; and explanations, charts, and diagrams with regard to hand and fingering positions, embouchure, and the position of both teeth and tongue while the instrument is being played. Techniques for breathing, articulation, and tonguing

the double reed should be thoroughly covered, with particular attention to coordinating the tongue and fingers. Short pieces which emphasize phrasing and the concepts of staccato and legato should also be included, along with scale and chordal exercises and materials for ear training in tonal relationships.

The instructional materials for intermediate and advanced students should consist of classical studies and etudes for bassoon, solo literature, and method books which describe advanced techniques for playing the instrument. These are most appropriate for individualized learning and should be supplemented with a study of theory and ear training that includes interval identification. Since technical proficiency and musical interpretation are primary goals at the advanced level, the student should be dealing with major works by noted composers in solo, orchestral, and ensemble repertoire. These should include bassoon literature of increasing difficulty which lends itself to memorization, sight reading, and ensemble playing.

III. Teaching and Learning

BEGINNING LEVEL

Students can begin to study the bassoon as soon as their fingers are large enough to cover the holes and the left ring finger can comfortably reach the C hole, but general maturity is also important. For this reason, the comments and recommendations of classroom teachers with regard to work habits and responsibility can be very useful in selecting qualified students. Early piano or woodwind experience is highly desirable.

Most schools do not start enough double-reed players. If possible, the music teacher at the middle or upper elementary school level (grades 5 and 6) should begin to teach this instrument to groups of two or three students. Such classes usually move smoothly, if the instruments and reeds are of sufficient quality to enable the students to play in tune.

Playing Position and Embouchure

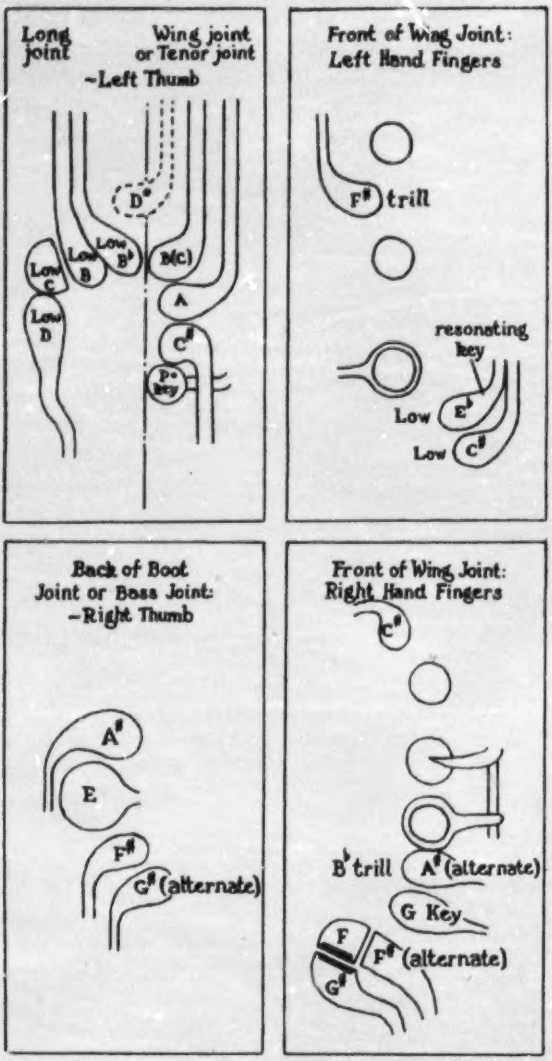
In proper playing position, the bassoon is held across the body, with the left palm upward at chest level and the right palm downward on the butt of the instrument as it rests against the right thigh. A leg or seat strap helps to distribute

the weight and, in the early stages of development, a hand support screwed into the double joint of the German model tends to hold the fingers in the best position for playing.

Correctly formed, the embouchure should serve as a cushion which prevents the lips and teeth from biting or pinching the reed. The upper lip should be placed near the first wire, rolled over the upper front teeth and drawn firmly against them. The chin should drop back, placing the lower lip near the tip of the reed. Like the upper lip, it should roll over the teeth—but in a relaxed manner, without turning inward.

Diaphragmatic breathing should be taught during the first 3 months as it becomes relevant to lessons in phrasing and dynamics. The crescendo/decrescendo from *pp* to *ff* and the reverse should be given special attention, since this is a particularly difficult skill for beginning students to master.

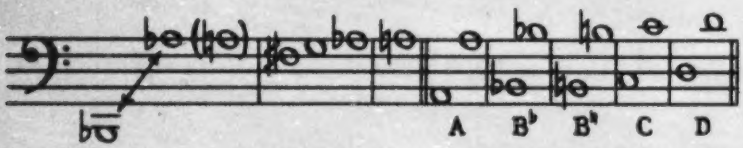
Key Identification Chart



Adapted from **Illustration 24: Chart of basic fingerings for Heckel system bassoon** on p. 57 of *The Art of Bassoon Playing* by William Spencer (Summy-Birchard Company, rev. ed., 1969) with permission from the publisher.

The first note for beginning bassoonists should be f, as it is the easiest to manipulate. Left-hand notes e, d, and c can also be learned in the first lesson; but it is important that the notes be associated with correct fingerings on the chart *as they are being played.* The students should memorize these fingerings as they are introduced and know their positions on the staff, their names, and how they are to be produced on the instrument. In addition, the students should be encouraged to *read* the fingering chart.

Lesson material in F Major is good for beginners since it can challenge both right and left hands without the introduction of difficult fingerings and half-hole combinations. Familiar as well as unfamiliar melodies, simple etudes, and easy solos should be included in the early lessons.



Whisper key (p. key on chart)

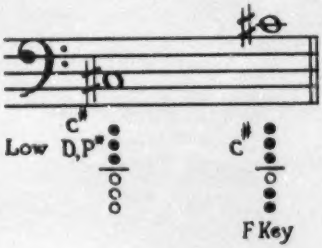
Whisper key and half-hole

Use a "flick" key (either A or high C on the octave skips, or other ascending or descending intervals over the register break: f to f♯

** a♮ tends to "crack" when approached by a leap in slurring.*

The function of the octave or whisper key (its range is from BB♭ to a♭ and sometimes a♮) should be carefully explained. The use of the index finger of the left hand to cover half of the hole on f♯, g, and a♭ should become habitual. The a♮ can be played approximately half-hole to improve its response and intonation. If the octave key is kept closed, the pitch will be lower than if it is open. This half-hole procedure will eliminate the ugly fluttering sounds that are produced if the index finger covers the entire hole. The whisper key must be down when these three notes are played. The use of the high A key or B(C) key on octave jumps (such as A to a, B♭ to b♭, c to c^1, d to d^1) will insure that students jump to the octave—otherwise they might fail to jump the octave and instead produce the unison note. In this procedure, the thumb presses lightly and moves quickly off the key with a flickering motion, from which the A and B(C) keys derive the name *flick keys.*

Students can be introduced to f♯¹, g¹, and a♭¹ during their first year of study. In order to produce better tone quality on these notes, the resonating key (the E♭ key played with the little finger of the left hand) should be used. The notes c♯ and c♯¹ can also be learned at this time, but students should use the fingerings identified below (see Key Identification Chart on p. 127) since those in some method books are incorrect.



*Piano or whisper key

Articulation

Students will develop a sustained concept of articulation if they are taught to practice whole notes on f-e-d-c and then bisect the airstream into half notes and, again, into quarter notes. They should be introduced to slurring sometime within the first 10 lessons, and learn staccato and legato tonguing techniques after they have mastered the slur. In good staccato technique, the tongue generally does not end the note as *tut*, but instead articulates *tu*. The legato tonguing technique can be presented as a refinement of the articulation technique described above, whereby the tongue "brushes" the long stream of air as a valve.

The development of accurate, fast articulation in a variety of styles depends upon the students' comprehension of the following principles:

- The forward part of the tongue is used in tonguing.
- The tongue and jaw should be relaxed (avoid the puckered chin).
- The throat should be open, with the tongue slightly depressed in the center.
- The tongue should serve as a valve which controls the airstream and the resulting vibration of the reed.

- Proper tonguing requires continuous breath support and sufficient wind pressure.
- The amount of pressure exerted on the tongue should be inversely proportionate to the speed of articulation.
- A well-regulated instrument and a flexible reed are essential.

The contact points of tongue and reed vary, to some extent, according to individual preference. In general, either the tip of the tongue or a spot on the top of the tongue just back of its tip should touch the tip of both blades of the reed. However, some bassoonists use the technique illustrated below to increase the efficiency of their articulation.

This technique involves less contact of tongue and reed, and might be used experimentally in the classroom.

Musicianship

The basic rudiments of music should be covered during the first few months of the beginning level of study. These include the staff; the clef signs; the bar and double bar lines; measure; notes and rests; time signatures (2/4, 3/4, and 4/4); simple key signatures and scales; and simple tempo and dynamic markings.

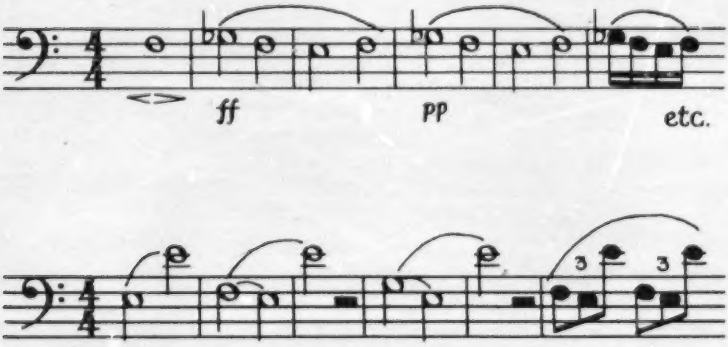
Finally, the teacher should promote a serious, but comfortable atmosphere for learning. Student curiosity about the bassoon, and about music in general, should be encouraged. There should be time for enjoying the basic principles, and for ensemble playing as well as supplementary solo experience. In particular, students should be urged to *listen* to their own playing and to tapes and records of performances by professional bassoonists and peers. They should come to realize that listening is the key to good intonation, that correct fingering alone will not necessarily produce notes that are in tune with each other.

Ensemble work for elementary school students might include participation in band, orchestra, duets, trios, quartets, and the woodwind quintet. Children at this level are not too young to be exposed to authentic woodwind quintet timbre. In fact, participation in the quintet can contribute more to the development of good concepts of tone quality, interpretation, and the rhythmic responsibility of individual performers than can readily be measured.

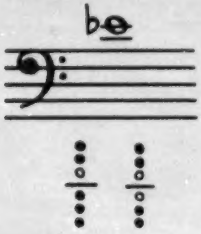
INTERMEDIATE LEVEL

Musicianship and Practice Techniques

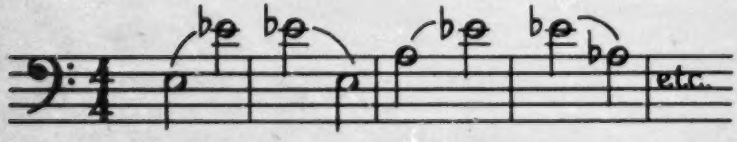
Intermediate level study should include a refinement of beginning level achievements, with particular emphasis on scales. This aspect of the work should include concentrated attention to dynamic gradation, tone quality, uniformity of sound, use of alternate fingerings, development of speed, tongue-and-finger coordination, and familiarity with specific pitch problems of the bassoon. In addition, the students should learn certain note patterns (e.g., arpeggiated chord progressions of I, IV, V, I and other harmonic idioms commonly found in music) that will promote smooth performance technique. Interval identification should also be introduced, and the memorization of melodies extended.

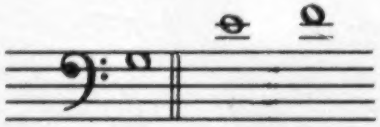
Exercises like the following which enhance the development of legato technique, good intonation, and general facility on the bassoon should be an integral part of intermediate level study:

Students should also be working on extended arpeggios; chromatic material; extended scales, using the full range; and problem-solving with regard to specific keys. Among the problems which should be included at the intermediate level are those involved in the use of:

- The whisper key;
- The half-hole first finger left hand;
- The E♭ resonating key; and
- The high A or high B-C key for legato slurs, either by "flicking" or depressing the key with the left thumb for better response of ascending octaves. In general, the high A key is used with octave slurs to a and the high B-C key, with octave slurs to b♭.

Fingerings for Legato Skips to and From e♭¹

Regular **Optional**

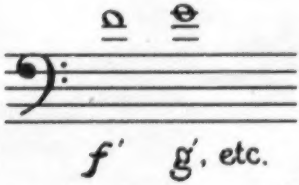
The choice of fingering depends upon the tone quality of e♭¹ produced by the particular combination of instrument and reed that is being used. More detailed information can be found in Cooper and Toplansky's *Essentials of Bassoon Technique* (see reference to this text in the Selected Resource Materials section at the end of this chapter).

Sample Exercise

The D♭ key can be used instead of the E♭ key, by experimenting with various reed/bocal/instrument combinations. Using the E♭ resonating key on these notes should improve their tone quality.



As the students progress, they should be introduced to such mechanically intricate techniques as embellishments, appoggiaturas, turns, mordents, and trills. When they can negotiate the upper register with some success, they should learn to read the tenor or C clef. This should be presented as a separate item, rather than relating it to the G or F clefs; and a good deal of time should be devoted to it, since nearly all advanced material includes portions that are written in tenor clef. The tenor or C clef can be found in most intermediate bassoon method books, and in cello and trombone literature which can be used as supplementary material for the study of bassoon.

Students will be well into the intermediate phase of performance before they begin to make extensive use of the top octave of the bassoon range. On these notes, even good students have a tendency to withdraw and pinch. In many cases (especially g^1, a^1, b^1, and c^2) the player must relax the lower jaw while supporting the tone; and the resonating key may be needed in order to produce a full sound on all notes above f^1. There should be a ringing sound after the note ends in each of these cases, if the pitch has been properly produced.



Much attention has been given to tonal attack on a wind instrument; but the correct closing of a tone is even harder for

students to grasp, and its execution is most important. A natural resonance follows the completion of a tone produced by string and percussion instruments. Unfortunately, however, although tonal resonance or *taper* is also necessary in woodwind sound, it is not a natural effect and must therefore be conceived and then produced in accordance with the concept. In general, the tone should be tapered to a pleasant sound with full resonance, appropriate breath support, and accurate intonation.

The use of quality reeds is most important. Reedmaking studied either with a competent professional or from the many books on the subject is a must for intermediate students, so that as they advance they will be able to play on their own reeds and understand how to alter them to taste. The teacher must recognize that if the reed is not prepared to produce dynamic extremes, if it plays out of tune or makes the tone croak, then the student will not be able to make the instrument respond properly. For solo work, a short narrow reed will give students the advantage of faster technique and greater flexibility. A good study of length and other variables in reeds has been included in William Spencer's *The Art of Bassoon Playing* (see annotated reference in the Selected Resource Materials listing at the end of this chapter). He shows lengths of lay from 1" to 1–5/16" and widths of tips from 16/32" to 21/32" in a comparison of 10 commercial reeds. An even greater variation in size would be found if all professional and commercial reeds were measured.

Breathing and Vibrato

Students at every level of learning must be aware that effective breathing requires an adequate breath supply, proper use of specific muscle groups, and application of the principles of breath control to phrasing, dynamic shading, vibrato, intonation, and tone quality. Shallow breathing initiated in the chest or throat regions will result in poor tone control. Proper breathing originates in the area of the diaphragm, and should be accomplished without unnatural raising of the shoulders and upper chest.

Diaphragmatic breathing is essential to vibrato. If students are asked to notice what happens when they laugh heartily, they should be able to identify the muscles which function during the process and then use them to pulsate a sustained tone on the bassoon. When the students can increase the

pulses to a regular speed of 5 to 6 per second, they can begin to apply the principle to sustained lyric studies or songs. In general, the teaching of vibrato should be delayed until the students can produce stable tones of consistently good quality and are ready for easy solo material.

It is very difficult for students to evaluate the sound they produce while they are producing it. For this reason, they should listen to recordings of their playing and compare the sounds they actually produce with those they *think* they produce. They may be surprised to hear qualities that the teacher had noted, but that they were unable to hear while playing. With the help of a tape recorder, they should develop a fairly accurate concept of their own tone production and then work more efficiently to improve it. Discontinuity and rough transition are examples of the kinds of problems students should be able to identify in a recording and begin to correct. Since discontinuity or disjointedness is usually caused by poor breath support and an inaccurate concept of crescendo and diminuendo production, they should try to build each crescendo with an ever-increasing push of air and then reverse the process for a proper diminuendo, checking their efforts with the tape recorder. In this as well as in other respects, it is important that the students also listen attentively to artists and competent professional bassoonists as they play solo, band, orchestra, and ensemble selections in live and recorded performances.

Intermediate-to-advanced study should include work on solo literature written by such famous composers for the bassoon as Galliard, Telemann, and Handel. Students at this level should be thoroughly familiar with the instrument's contribution to bands and orchestras, and become increasingly familiar with its role in smaller ensembles. For these reasons, they should be active in school and/or community bands, orchestras, and smaller ensembles and perform in concerts, assemblies, and music festivals. The most valuable types of ensemble work for students at this level are the baroque trio and the woodwind quintet. The baroque trio sonatas of Vivaldi and Telemann can easily be adapted for flute, oboe, bassoon, and keyboard, with the bassoonist playing the basso continuo part; and there is a wealth of good music for the woodwind quintet, plus many fine recordings by excellent performing groups (see Selected Resource Materials listing for representative titles). The major benefit of ensemble work is that each member of the group must listen carefully to the

total sound and exercise good musical judgment with regard to his/her own contribution.

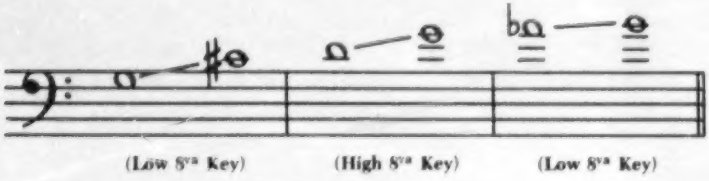
ADVANCED LEVEL

Students at the advanced level should be expected to:

- Continue their daily exercises for finger dexterity, using arpeggios in advanced chord progressions throughout the range of the instrument;
- Increase their proficiency in playing tenor clef;
- Become acquainted with concert etudes and melodies over the bassoon's tessitura;
- Study excerpts from and memorize bassoon solos in such well-known orchestral works as Mozart's *Le Nozze di Figaro,* the second movement of Beethoven's *Third Symphony,* "March Funebre," and Stravinsky's *Le Sacre du Printemps;*
- Increase their understanding of the various musical styles of the major composers and develop their ability to interpret tempo, dynamics, and expressive notation in context; and
- Perform solo literature of such composers as Hindemith, Vivaldi, Mozart, and Saint-Saens with proper expression, interpretation, tonal beauty, vibrato, and the many subtle shadings appropriate to the style of each selection.

Their knowledge of music theory should include chord progressions, major and minor scales, whole-tone scales, and the use of major and minor chords and diminished sevenths. They should have acquired a sizable collection of books and recordings; a number of tape recordings of their own playing; and a file or scrapbook of programs, clippings, etc., from concerts, recitals, and artists' performances. Finally, they should have begun to think of themselves as *bassoonists* who seek opportunities to learn as well as to perform, who cut their own reeds to their musical tastes, and who exhibit a professionalism in both attitude and behavior that makes them worthy of the name.

THE CONTRABASSOON

Advanced level students can gain valuable insight from experience with the contrabassoon, if they are physically mature enough to play it comfortably. The instrument is the largest member of the woodwind family, and must be placed on the floor in front of the performer and held between the knees when it is played. The contrabassoon has a tuning slide, a water valve which prevents saliva (or moisture) from collecting in the wooden sections of the instrument, and two octave keys. As indicated in the diagram, the lower octave key is used for notes g through $c\sharp^1$ and $a\flat^1$ through b^1; and the higher octave key is used for notes d^1 through g^1.

There is no whisper key on the bocal, and there are no high A or high B keys.

Method books are difficult to find, and the few that are available are designed for use by advanced bassoonists; but handmade reeds for the instrument can be purchased from a number of woodwind supplyhouses or a professional performer. If students choose to make their own, the reeds will probably have to be cut without the help of a shaper.

The contrabassoon can be a valuable member of any concert group because of its versatility, its tonal beauty, and the inimitable contribution of its range to the total sound of the ensemble. It uses the same music as the standard bassoon, but sounds an octave lower. Among the major orchestral works that require the voice of the contrabassoon are Beethoven's fifth and ninth symphonies, Brahms' first and third symphonies, Dukas' *The Sorcerer's Apprentice*, Mozart's *Grande Serenata in B♭ for 13 Wind Instruments*, Ravel's *Daphnis et Chloe*, Strauss' *Don Juan*, and Verdi's *Othello*.

IV. Selected Resource Materials

BOOKS AND PAMPHLETS

Artley, Joe. *How to make double reeds for oboe, English horn, and bassoon;* 2d ed., rev. Stamford, Connecticut: Jack Spratt Music Company, 1961. Available from Plymouth Music Company, 1841 Broadway, New York, New York 10023.

A very informative text on procedures for making double reeds. A good self-instruction guide for high school students. Includes a catalog of equipment needed.

Best, A. S. *The bassoonist.* Educational Services Department of the Conn Corporation, 1958.

An instructional aid designed for instrumental music teachers of young bassoonists.

Camden, Archie. *Bassoon technique.* New York: Oxford University Press, 1962. Order from Oxford University Press, Inc., 1600 Pollitt Drive. Fair Lawn, New Jersey 07410.

Written for the student who cannot take regular private instruction from a professional bassoonist. Deals with basic techniques and includes an extensive list of music for the bassoon.

Christlieb, Don. *Notes on the bassoon reed: machinery, measurement analysis;* rev. ed. Published by the author, 1966.

————. *Pictorial fingerings for the bassoon;* rev. ed. Published by the author, 1969.

Cooper, Lewis & Howard Toplansky. *Essentials of bassoon technique.* Toplansky, Publisher, 559 Winthrop Road, Union, New Jersey 07083. n. d.

A comprehensive source of fingerings for bassoon. Includes all alternate, trill, and harmonic fingerings.

Heckel, W. H. *Chromatic scale for Heckel bassoon.* New York: Carl Fischer, Inc., n. d.

————. *The bassoon.* Trans. by Langwill and Waples. Stamford, Connecticut: Jack Spratt Music Company, 1940. Available from Plymouth Music Company, 1841 Broadway, New York, New York 10023.

Langwill, L. G. *The bassoon and contrabassoon.* New York: W. W. Norton and Company, Inc., 1965.

Lehman, P. R. *The harmonic structure of the tone of the bassoon.* Seattle, Washington: Berdon, 1965.

Oubradous, F. *Enseignement complet du basson.* Paris, France: Alphonse Leduc. 3 vols. Available from M. Baron Company, P.O. Box 149, Oyster Bay, New York 11771.

Pence, Homer. *Teachers' guide to the bassoon.* Elkhart, Indiana: H. & A. Selmer, Inc., 1963. Available from Derby Music Service, 5143 Busch Boulevard, Tampa, Florida 33617.

An oversized pamphlet designed for instrumental music teachers who are not bassoon specialists. Uses a problem-solving approach. Text is lucid, authoritative, and illustrated by numerous diagrams and charts.

Read, V. B. *Daily studies for bassoon and tempo-tuner.* Palo Alto, California: Electronic Research Products, 1965.

A pamphlet describing how to use a tempo-tuner with the bassoon.

Risdon, Howard. *Musical literature for the bassoon: a compilation of the music for the bassoon as an instrument in ensemble.* Seattle, Washington: Berdon, 1963.

Siennicki, E. J. *Technical growth for the bassoonist.* Evanston, Illinois: Summy-Birchard Company, 1963.

Explanations and etudes for improvement of tone, intonation, and fingering technique.

Spencer, William. *The art of bassoon playing.* Rev. by Frederick A. Mueller. Evanston, Illinois: Summy-Birchard Company, 1969.

A thorough, technical, yet readily comprehensible reference which includes all aspects of bassoon technique. Full of illustrations, charts, and diagrams. Also includes selected literature, periodicals, methods, and recordings. A must for students, teachers, and many performers as well.

METHODS

Dherin, G. & P. Pierne. *Nouvelle technique du basson.* Paris, France: Henry Lerioine, 1942. Vol. 1: Exercises by Dherin. Vol. 2: Studies by Pierne.

Etudes for advanced technique and interpretation.

Gambaro, J. B. *18 studies for bassoon.* Ed. by Simon Kovar. New York: International Music Company, 1951.

A good book for advanced level students. Includes the tenor clef.

Gekeler, Kenneth. *Bassoon method.* Melville, New York: Belwin-Mills Publishing Corporation, 1952. 3 vols.

Presents a logical progression from elementary through intermediate level study.

Kopprasch, C. *60 studies for bassoon.* Ed. by Simon Kovar. New York: International Music Company, 1956. 2 vols.
For advanced students only.

Kovar, Simon. *24 daily exercises for bassoon.* Simon Kovar, 4974 Noeline Avenue, Encino, California.
A comprehensive method book for mechanical drill in tone control and dynamics. Suggested for intermediate and advanced level students.

Mather, Christine, adapter. *First pieces for bassoon.* New York: Oxford University Press, 1964. 2 vols. Order from Oxford University Press, Inc., 1600 Pollitt Drive, Fair Lawn, New Jersey 07410.
A well-designed collection for bassoon and piano that enables beginners to play musically while using material which is appropriate for their early development. The second volume introduces the tenor clef.

Milde, L. *Concert studies, opus 26, for bassoon.* Ed. by Simon Kovar. New York: International Music Company, 1948. 2 vols.
Designed for advanced students only. Most of the studies are two pages in length and cover the entire range of the bassoon in a melodious manner. Uses the tenor clef.

———. *25 studies in scales and chords for bassoon.* Ed. by Simon Kovar. New York: International Music Company, 1950.
A prerequisite for the concert studies cited above. Suggested for use with intermediate and advanced level students. Includes a good approach to drill on tenor clef.

Notes alive. Educational Research, P.O. Box 820, Chicago, Illinois, n. d.
An elementary instruction book that makes use of records and tapes as supplements.

Orchestral studies for all instruments. Ed. by Mederack. Frankfurt, Germany: Verlag Friedrich Hofmeister, 1955. 8 vols.

Orchestral studies for bassoon. Ed. by Pezzi. Philadelphia, Pennsylvania: Elkan-Vogel Company, Inc., 1948.
Includes works by Tchaikovsky, Wagner, and Strauss.

Orefici, A. *Studi melodici per fagotto.* Paris, France: Alphonse Leduc, 1946. 2 vols. Available from M. Baron Company, P.O. Box 149, Oyster Bay, New York 11771.
Melodic studies using both clefs. For advanced level students.

Paine, Henry. *Bassoon student.* Melville, New York: Belwin-Mills Publishing Corporation, 1969.

A private instruction book on the elementary level which includes suggestions for the student and supplementary material lists.

Pierd, Marius. *Enseignement du contrabasson.* Paris, France: Alphonse Leduc, 1952. Available from M. Baron Company, P.O. Box 149, Oyster Bay, New York 11771.

Method material for advanced bassoonists who elect to study contrabassoon. Includes drills, etudes, and orchestral studies. One of the very few method books available for this instrument.

———. *16 characteristic studies for bassoons.* New York: International Music Company, 1950.

One-page etudes for the moderately advanced student.

Siennicki, E. J. *Technical growth for the bassoonist.* Evanston, Illinois: Summy-Birchard Company, 1963.

Explanations and etudes for improvement of tone, intonation, and fingering technique.

Stadio, Ciro. *Passi difficili e "a solo" per fagotto.* London, England: G. Ricordi and Company. Available from Belwin-Mills Publishing Corporation, 25 Deshon Drive, Melville, New York 11746.

Includes difficult solo passages from the major symphonies and operas.

Weissenborn, Julius. *Bassoon studies, opus 8.* New York: Carl Fischer, Inc.; International Music Company; Cundy-Bettoney; and C. F. Peters. 2 vols.

The standard comprehensive private instruction series covering the beginning through intermediate stages of development in volume I and the advanced stage in volume II.

FILMS AND FILMSTRIPS

Oboe and bassoon care. (filmstrip). Encyclopaedia Britannica Educational Corporation, 425 North Michigan Avenue, Chicago, Illinois 60611. 1966. 46 frames. sound. color. 35 mm. (filmstrip series no. 11020, band instrument care).

Developed by teachers for teachers and students, each step is clearly illustrated by vivid closeups.

RECORDINGS*

Danzi, Franz. *Bassoon quartets.* Lyrichord LL 154. Arthur Grossman, bassoonist.

Hindemith, Paul. *Sonata for bassoon.* EMS-6. Garfield, bassoonist.

Leonard Sharrow plays bassoon. Coronet.

Representative solos for bassoon and piano drawn from many periods of music history.

Mozart, W. A. *Concerto in B♭.* K. 191. Vox PL-8870; Cermak, bassoonist. Decca DL-9834; Klepac, bassoonist. London LL-1135; Helaerts, bassoonist. RCA Victor LM-1030; Leonard Sharrow, bassoonist. Westminster WL-5507; Oehlberger, bassoonist.

Music minus one. Classic MMO-104.

Includes a complete performance of Beethoven's *Quintet,* Opus 16 and Mozart's *Quintet* on one side, and the same performance without the bassoon part on the other.

Phillips, B. *Concert piece for bassoon and strings.* Columbia ML-4629; Schoenbach, bassoonist. Victor 18102A; Pezzi, bassoonist.

Recital music for bassoon. MRS 32286. Mark Educational Recordings, Inc., 4249 Cameron Road, Buffalo, New York 14221. Robert Quayle, bassoonist, with James Staples on the piano.

Includes standard contest pieces such as Hindemith's *Sonata for Bassoon,* Bozz's *Recit., Sicilienne and Rondo,* and Mozart's *Concerto in B♭.*

Vivaldi, Antonio. *Concerto in B♭.* Colosseum CLPS-1029; Montanari, bassoonist. Concert Hall CHC-56; Garfield, bassoonist.

von Weber, Carl. *Hungarian fantasy.* Victor 20525. Gruner, bassoonist.

———. *Rondo.* YPR 1009. Carmen, bassoonist.

Wilder, A. *Air for bassoon and strings.* Columbia ML-4271. Goltzer, bassoonist.

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*These items are representative of the types of recorded material that can be most useful for teachers and/or students. The selection is far from complete. For a more comprehensive listing, consult the instrumental music sections of such catalogs as the *Schwann Artist Issue* produced by W. Schwann, Inc., 137 Newbury Street, Boston, Massachusetts 02116.

GENERAL RESOURCE LISTING

Accompaniments Unlimited, Inc. Grosse Pointe Woods, Michigan 48236.

3,000 tape recordings of piano accompaniments to instrumental and vocal solos. Since the tapes have accompaniment played at reduced tempo for learning, it is advisable to use them on tape recorders with variable speed control for accurate tuning.

Anastasiow, N. J. & R. F. Shambaugh. "Experimental use of pre-instrumental music melody instruments." *Journal of Research in Music Education.* Vol. XIII, No. 4—Winter 1965: 246–248. Washington, D.C.: Music Educators National Conference.

Baines, Anthony. *Musical instruments through the ages.* Baltimore, Maryland: Penguin Books, Inc., 1961.

———. *Woodwind instruments and their history.* New York: W. W. Norton and Company, Inc., 1963.

Band instrument care. (filmstrip series no. 11020). 10 filmstrips. Encyclopaedia Britannica Educational Corporation, 425 North Michigan Avenue, Chicago, Illinois 60611. 1966. sound. color. 35 mm.

Presents closeups of each step in the care and maintenance of various band instruments. Shows some of the products that lend themselves particularly well to cleaning and maintenance. Instruments included are the baritone and euphonium, clarinet, cornet and trumpet, flute and piccolo, French horn, oboe and bassoon, percussion instruments, saxophone, trombone, tuba, and sousaphone.

Bartolozzi, Bruno. *New sounds for woodwinds.* Trans. by Reginald S. Brindle. New York: Oxford University Press, 1967. Order from Oxford University Press, Inc., 1600 Pollitt Drive, Fair Lawn, New Jersey 07410.

Berlioz, Hector. *An abridged treatise on modern instrumentation and orchestration.* New York: Carl Fischer, Inc., n. d.

Bonade, Daniel. *Manual of reed fixing.* New York: Bonade-Falvo-NPA Corporation, n. d.

Brand, E. D. *Band instrument repair manual.* Elkhart, Indiana: Erick D. Brand, 1946.

Brilhart, Arnold. "A mouthpiece maker speaks to teachers." *Selmer Bandwagon.* Elkhart, Indiana: H. & A. Selmer, Inc., May 1966. Available from Derby Music Service, 5143 Busch Boulevard, Tampa, Florida 33617.

A discussion of mouthpiece specifications and their importance to students.

Cahn, M. M. *The instrumentalist's handbook and dictionary.* San Francisco, California: Forman Publishing Company, 1958.

Carse, Adam. *Musical wind instruments.* DaCapo Press. New York: Plenum Publishing Corporation, 1965.

Coker, Jerry. *Improvising jazz.* Englewood Cliffs, New Jersey: Prentice-Hall, Inc.. n. d.

Conn Corporation. 1101 East Beardsley, Elkhart, Indiana 46514. *How to care for your instrument.*

A 36-page pamphlet on the care and maintenance of all instruments. Easily understood and fully illustrated.

————. *The effect of temperature on the tuning standards of wind instruments,* by Jody C. Hall, Chief Acoustical Engineer, and Earle L. Kent, Director of Research, 1959.

An educational pamphlet that cites the necessity for a tuning standard and then describes the effects of temperature on that standard.

————. *The proper selection of clarinet and saxophone mouthpieces.*

————. 35 mm filmstrips with teaching guides.

Visual aid and teaching manual describing embouchure, tongue placement, hand position, and other fundamentals which must be learned at beginning levels of instrumental music instruction. Includes separate filmstrips for all band instruments and strings.

DeFranco, Buddy. *The dimensions of jazz.* Kenosha, Wisconsin: Leblanc Publications, Inc., n. d.

A series of articles pertaining to the rhythm and harmonic structure of various jazz idioms. Describes the role of the stage band in modern American society.

Fennell, Frederick. *Time and the winds.* Kenosha, Wisconsin: Leblanc Publications, Inc., 1968.

Galpin, Francis. *A textbook of European musical instruments: their origin, history, and character.* New York: J. DeGraff, 1956.

Geiringer, Karl. *Musical instruments, their history in Western culture.* New York: Oxford University Press, 1945. Order from Oxford University Press, Inc., 1600 Pollitt Drive, Fair Lawn, New Jersey 07410.

Gower, William. *Woodwind tone production comparative chart.* Kenosha, Wisconsin: Leblanc Publications, Inc., n. d.

A chart which illustrates the similarities and differences among various woodwinds, as affected by angle and bite, embouchure, tongue, breath, and intensification of tone and vibrato.

Hendrickson, V. *Handy manual fingering charts for instrumentalists.* New York: Carl Fischer, Inc., 1957.

Hilton, L. B. *Learning to teach through playing.* Addison-Wesley Company, 1970.

Johnstone, A. E. *Instruments of the modern symphony orchestra and band; a pictorial and explanatory guide.* New York: Carl Fischer, Inc., 1917.

Kuhn, W. E. *Instrumental music: principles and methods of instruction.* Rockleigh, New Jersey: Allyn and Bacon, Inc., 1962.

Langwill, L. G. *An index of musical wind instrument makers;* 2d ed. Published by the author. Edinburgh, Scotland. 1962.

Learning Unlimited band series. Developed by Learning Unlimited, a division of Hal Leonard Pointer Publications, Inc., for exclusive distribution by Charles E. Merrill Publishing Company, 1300 Alum Creek Drive, Columbus, Ohio 43216.

Programed instruction material consisting of a series of booklets, each accompanied by a "teacher-on-tape" cassette. Available for flute, oboe, clarinet, alto saxophone, tenor saxophone, and bassoon as well as for brass and percussion instruments, the material is arranged in six levels of instruction for use in independent study, private lessons, and class instruction in which all members of the group are learning to play the same instrument.

Leidig, V. F. *Contemporary woodwind technique.* Hollywood, California: Highland Music Company, 1960.

Describes the acoustical relationships of wind instrument families, and relates this information to fingerings. Includes explicit transposition charts, study guides, and quizzes.

Luce, J. R. "Sight-reading and ear-playing abilities as related to instrumental music students." *Journal of Research in Music Education.* Vol. XIII, No. 2—Summer 1965: 101–

109. Washington, D.C.: Music Educators National Conference.

Marcuse, Sibyl. *Musical instruments: a comprehensive dictionary.* Garden City, New York: Doubleday and Company, Inc., 1964.

Martignetti, A. J. "Causes of elementary instrumental music dropouts." *Journal of Research in Music Education.* Vol. XIII, No. 3—Fall 1965: 177–183. Washington, D.C.: Music Educators National Conference.

Music minus one. (recordings). 43 West 61st Street, New York, New York 10023.

Accompaniment backgrounds on LP records for singers and instrumentalists. Self-teaching music methods (e.g., woodwind quintets minus flute, oboe, clarinet, bassoon, or horn). Volumes I, II, or III. Solo repertoire with piano accompaniment minus flute, oboe, clarinet, saxophone, or bassoon. Band or orchestra accompaniments minus flute, oboe, clarinet, saxophone, or bassoon.

Myatt, B. M. *The woodwind book.* New York: McGinnis and Marx, 1957–58. Available from Boosey and Hawkes, Inc., Oceanside, New York 11572.

New York State Education Department. Bureau of General Education Curriculum Development. *Words, sounds, and pictures about music, K–6.* Albany, New York: New York State Education Department, 1970.

An annotated resource listing of books for children, books for teachers, audiovisual materials, and sources of supplies and services for music education in the elementary school.

———. Bureau of General Education Curriculum Development. *Words, sounds, and pictures about music, 7–12.* Albany, New York: New York State Education Department, 1970.

A companion volume to the annotated multimedia resource listing cited above. Designed for music teachers in grades 7–12, the collection includes a professional bibliography, periodicals, general reference works, guidelines and materials for general music, references for music in the Western and non-Western worlds, music theory, acoustics, instrumental music, vocal music, music for special students, and sources of supplies and services.

New York State School Music Association. Manual. Graded solo and ensemble materials. Scotia, New York: New York State School Music Association, 1975.

Onondaga Community College. New York State School Music Association Manual Library. Syracuse, New York: Onondaga Community College Music Department.

Contains a complete collection of NYSSMA Manual Library holdings, plus recordings, a listening center, and an electronic piano setup.

Paetkau, D. H. *The growth of instruments and instrumental music.* New York: Vantage Press, Inc., 1962.

Palmer, H. G. *Teaching techniques of the woodwinds.* Melville, New York: Belwin-Mills Publishing Corporation, 1952.

Peters, H. B. *The literature of the woodwind quintet.* Metuchen, New Jersey: Scarecrow Press, Inc., n. d.

The results of a study by the Wingra Quintet covering literature for woodwind quintet plus one additional instrument.

Rasmussen, Mary & Donald Mattran. *A teacher's guide to the literature of woodwind instruments.* Durham, New Hampshire: Appleyard Press, 1966.

Russell, George. *Lydian chromatic concept of tonal organization.* New York: Concept Publication Company, n. d.

Sachs, Curt. *The history of musical instruments.* New York: W. W. Norton and Company, Inc., 1940.

———. *Woodwind anthology.* New York: *Woodwind Magazine,* 1952. Reprinted by McGinnis and Marx. Available from Boosey and Hawkes, Inc., Oceanside, New York 11572.

Sawhill, Clarence & Bertram McGarrity. *Playing and teaching woodwind instruments.* Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1964.

Spicer, Randall. *Training the woodwind section in full band rehearsal.* (Educational pamphlet). Kenosha, Wisconsin: Leblanc Publications, Inc., n. d.

Summy-Birchard Company. *"The art of . . . " series.* Evanston, Illinois: Summy-Birchard Company, 1958–70. 5 vols.

Includes *The Art of Flute Playing,* by Edwin Putnik (1970); *The Art of Oboe Playing,* by Robert Sprenkle and David Ledet (1961); *The Art of Clarinet Playing,* by Keith Stein (1958); *The Art of Saxophone Playing,* by Larry Teal (1963); and *The Art of Bassoon Playing,* by William Spencer (1969).

Taylor, C. H. *Prevailing practices in the supervision of instrumental music.* Washington, D.C.: Music Educators National Conference, 1962.

Thornton, James. *Woodwind handbook.* San Antonio, Texas: Southern Music Publishing Company, 1960.

Especially valuable for new teachers. Contains approaches to flute, oboe, clarinet, saxophone, and bassoon playing.

Tiede, C. H. *The practical band instrument repair manual.* Dubuque, Iowa: William C. Brown Company, Publishers, 1962.

Repair operations are outlined with photographs, diagrams, and step-by-step procedures. Maintenance and prevention are stressed. Techniques are geared for use in public school situations where access to professional repairmen is limited.

Trimm, E. L. *The woodwinds.* Rockleigh, New Jersey: Allyn and Bacon, Inc., 1967.

Vagner, Robert. "How to get the most out of reeds." *Selmer Bandwagon.* Vol. 14, No. 2—May 1966. Elkhart, Indiana: H. & A. Selmer, Inc., n. d. Available from Derby Music Service, 5143 Busch Boulevard, Tampa, Florida 33617.

Warner, T. E. *An annotated bibliography of woodwind instruction books, 1600–1830.* Information Coordinators, 1967.

Weerts, Richard. *Handbook for woodwinds.* Kirksville, Missouri: Simpson, 1966.

———. *Developing individual skills for high school bands.* West Nyack, New York: Parker Publishing Company, 1969.

Separate chapters describe methods of practice and memorization, graded instructional materials, solo and ensemble literature, and individual instruments and their idiosyncrasies. New teachers should find this text especially helpful.

Westphal, F. W. *Guide to teaching woodwinds.* Dubuque, Iowa: William C. Brown Company, Publishers, 1962.

———. *Woodwind ensemble method for teaching education.* Dubuque, Iowa: William C. Brown Company, Publishers, 1961.

Wiesner, Glenn, Daniel Balbach, & Merrill Wilson. *Orthodontics and wind instrument performance.* Washington, D.C.: Music Educators National Conference, 1973.

A guide for teachers, dentists, students, and parents which includes the following topics: purposes and goals of

orthodontic treatment; physical adjustment to wind instruments; mouthpiece pressure; choice of instrument; protective appliances; appliances for the untreated case; and retainers and psychological adjustment.

Woodwind anthology. (Articles from *Woodwind Magazine*). New York: McGinnis and Marx, 1952. Available from Boosey and Hawkes, Inc., Oceanside, New York 11572.

Woodwind world. Oneonta, New York: Swift-Dorr Publications, Inc. 5 issues yearly.

Includes noteworthy musical events, pedagogical and scientific articles, and reviews of books and music.